

Statement

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*Master behind
your wonderful display*

Headquarter

+86 4008 770 775
37F-39F, Building 8, Zone A, Shenzhen International Innovation Valley,
Vanke Cloud City, Nanshan District, Shenzhen, China

Colorlight US Inc.

+1(949)536 5586
3406 W Burbank Blvd, Burbank, CA 91505

Colorlight Cloud B.V

+31(0)40 851 75 23
Kanaaldijk-Noord 109D, 5642 JA Eindhoven, Netherlands



Colorlight

CS Series
Media Server

Creative Video · Infinite Future

CONTENTS

01	Introduction	01
02	Features	09
03	Application	53

01 Introduction

About CS Media Server	03
CS16K Series	04
CS20-8K Series	05
CS4K Series	06

About CS Media Server

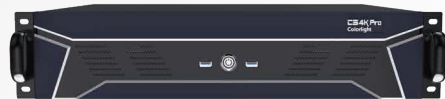
CS series media servers are developed and produced by Colorlight, featuring powerful capabilities and stable performance. With company's continuous innovation and improvement, these series provide outstanding large-screen display solutions for stage performances, exhibitions, large conferences, architectural facade display projects worldwide.



CS16K Series



CS20-8K Series



CS4K Series



GrandShow (software)

CS16K Series



- Multiple graphics cards, Capable of 16K x 4K video output.
- Built-in sync card, Accurate frame sync for synchronous display.
- Capture card (optional), Different types of ports, capable of dual 8K resource capture.
- Embedded 10Gb NIC, Lightning speed, improving efficiency for resource synchronization.
- Wake on LAN, Remote control for server startup and shutdown.
- Power redundancy, Power redundancy to ensure stable power supply at all times.

Feature/ Server	CS16K
CPU	Intel®16 cores 32 threads
RAM	128GB
Graphics card	32GB VRAM
Output Channels	8×4K
Output port	8×DP 1.4
Maximum output resolution	16384×4320/60fps
Input port (optional)	8×12G SDI or 8×HDMI 2.0
Audio	1×in, 4×out, 1×S/PDIF out
NDI Video over IP caputre	✓
Storage	1TB (maximum: 8TB)
Frame Sync	✓
EDID	✓
Timecode In/ Out	✓
Embedded GrandShow license	✓
Ethernet port	1×10 GbE RJ45; 1×1 GbE RJ45
USB	2×USB 2.0; 7×USB 3.0
Output power	1300 W (RPS)
Mounting system	5RU rack-mounted chassis

CS20-8K Series



- Front touch panel, Shortcuts available, real-time monitoring of hardware status.
- Extended sync card, Accurate frame sync for synchronous display.
- Capture card (optional), Different types of ports, capable of 8K resource capture.
- 10Gb NIC (optional), Lightning speed, improving efficiency for resource synchronization.
- Wake on LAN, Remote control for server startup and shutdown.

Feature/ Server	CS20-8K	CS20-8K Pro
CPU	Intel®6 cores 12 threads	Intel®10 cores 20 threads
RAM	16GB	32GB
Graphics card	4GB VRAM	16GB VRAM
Output Channels	4×4K	4×4K
Output port	4×mDP 1.4	4×DP 1.4
Maximum output resolution	8192×4320/60fps	8192×4320/60fps
Input port (optional)	4×3G SDI or 2×HDMI 2.0	4×12G SDI or 4×HDMI 2.0
Audio	1×in, 4×out, 1×S/PDIF out	1×in, 4×out, 1×S/PDIF out
NDI Video over IP caputre	Yes	Yes
Storage	500GB (maximum: 2TB)	1TB (maximum: 4TB)
Frame Sync	⊘	✓ (Optional)
EDID	✓	✓
Timecode In/ Out	✓	✓
Embedded GrandShow license	✓	✓
Ethernet port	1×2.5 GbE RJ45	2×1 GbE RJ45
USB	2×USB 2.0; 6×USB 3.0	4×USB 2.0; 8×USB 3.0
Output power	650W	1000W
Mounting system	4RU rack-mounted chassis	4RU rack-mounted chassis

CS4K Series

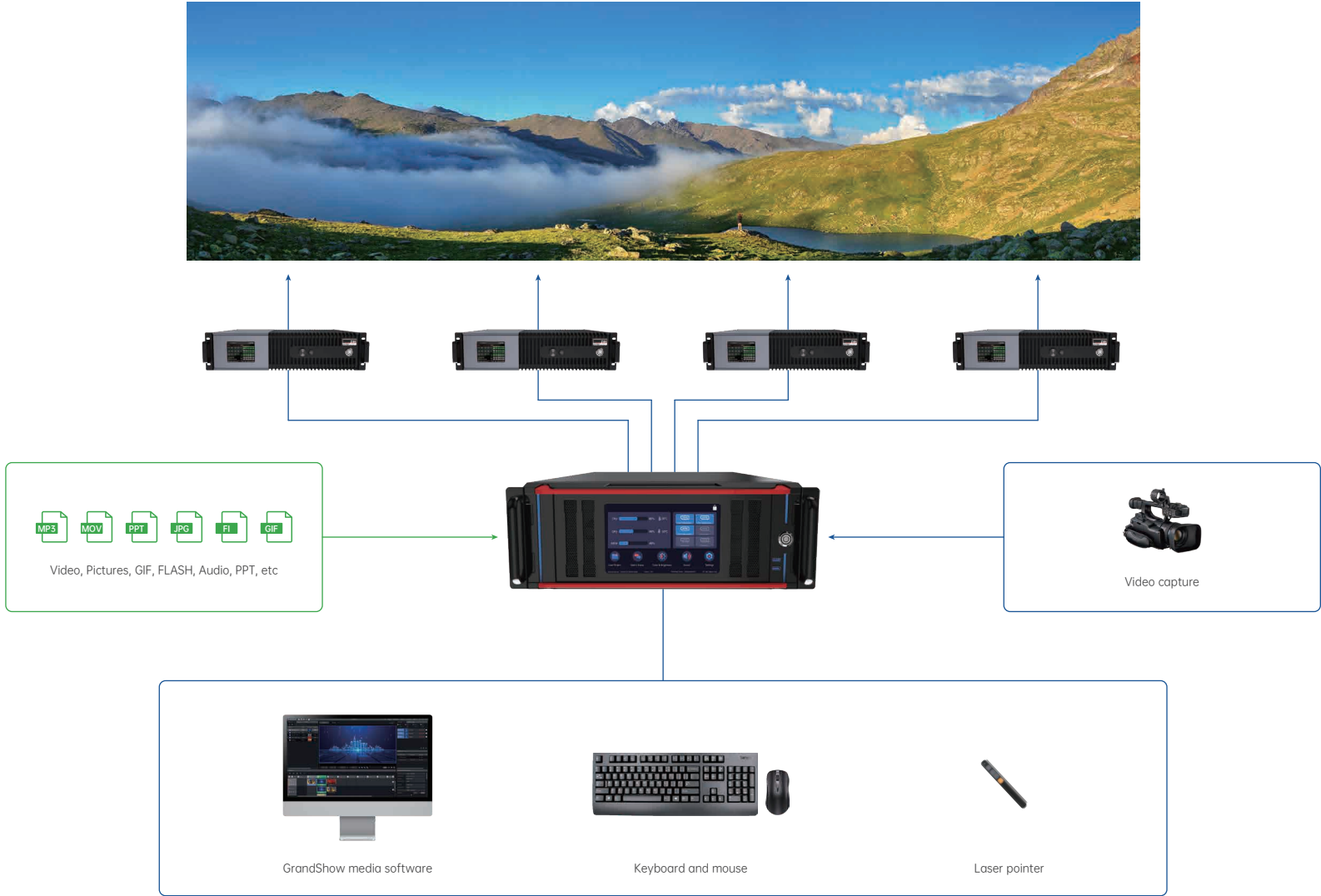


- Capture card (optional), Various types of ports.
- 10Gb NIC (optional), Lightning speed, improving efficiency for resource synchronization.
- Wake on LAN, Remote control for server startup and shutdown.

Feature/ Server	CS4K	CS4K Pro
CPU	Intel®6 cores 12 threads	Intel®6 cores 12 threads
RAM	8GB	16GB
Graphics card	4GB VRAM	4GB VRAM
Output Channels	1×4K	2×4K
Output port	1×mDP 1.4	2×mDP 1.4
Maximum output resolution	4096×2160/60fps	8192×2160/60fps
Input port (optional)	1×DVI or 1×SDI	1×DVI or 1×SDI
Audio	1×in, 2×out	1×in, 2×out
NDI Video over IP caputre	Yes	Yes
Storage	500GB (maximum: 1TB)	500GB (maximum: 1TB)
Frame Sync	⊘	⊘
EDID	✓	✓
Timecode In/ Out	✓	✓
Embedded GrandShow license	✓	✓
Ethernet port	1×1 GbE RJ45	1×1 GbE RJ45
USB	2×USB 2.0; 4×USB 3.0	2×USB 2.0; 4×USB 3.0
Output power	250W	250W
Mounting system	2RU rack-mounted chassis	2RU rack-mounted chassis

GrandShow

Featuring non-linear editing and real-time rendering, GrandShow is a professional multimedia playback and control software with abundant functions for color adjustment and robust video editing capabilities. Powerful, stable and reliable, it ensures smooth and delicate playback while offering excellent interactive experience.



02 Features

Media playback	10	Control method	36
External control	18	Creative display	38
Effects	22	Audio management	44
Multi-server management	26	Redundancy	48
Logs	32		

CS

2.1 Media Playback

Powerful media playback function is available for most media formats, allowing integrated playback of various resources without transcoding.

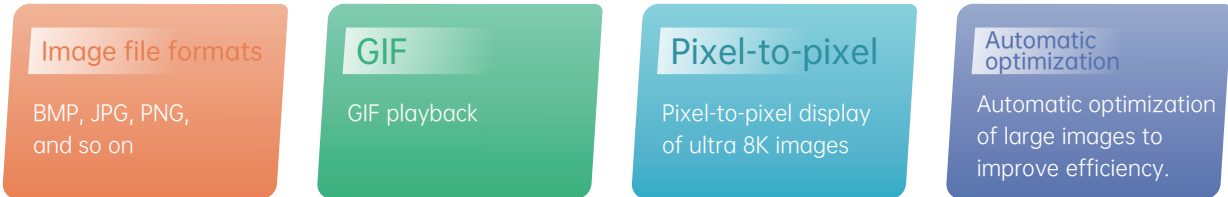
2.1.1 Video

Capable of: Pixel-to-pixel display of ultra 8K videos; Ffmpeg software decoding and DXVA hardware decoding; 3D diplay; Compatible with: Various containers such as MP4, MOV, and AVI; Various codecs such as H.264, H.265, HAP, and ProRes.



2.1.2 Image

Various image file formats, such as BMP, JPG, and PNG; GIF playback; Pixel-to-pixel display of ultra 8K images; Automatic optimization of large images to reduce CPU and GPU usage.



2.1.3 PPT

PPT animations playback; Embedded video playback; Laser pointer control.

PPT animations

PPT animations playback

Embedded video

Embedded video playback

Laser pointer

Laser pointer control

2.1.4 Texts

Multi-line texts and ultra-long texts; Scrolling playback in a loop.

Multi-line texts

Multiple lines of text contents

Ultra-long texts

Display resources with more than 100K pixels

Scrolling playback

Scrolling playback starting from any direction

Continuous display

Texts are displayed in a loop.

2.1.5 Webpage

Powered by Chromium; Custom display resolution of webpage; Playback of audio/video embedded in webpage.

Custom resolution

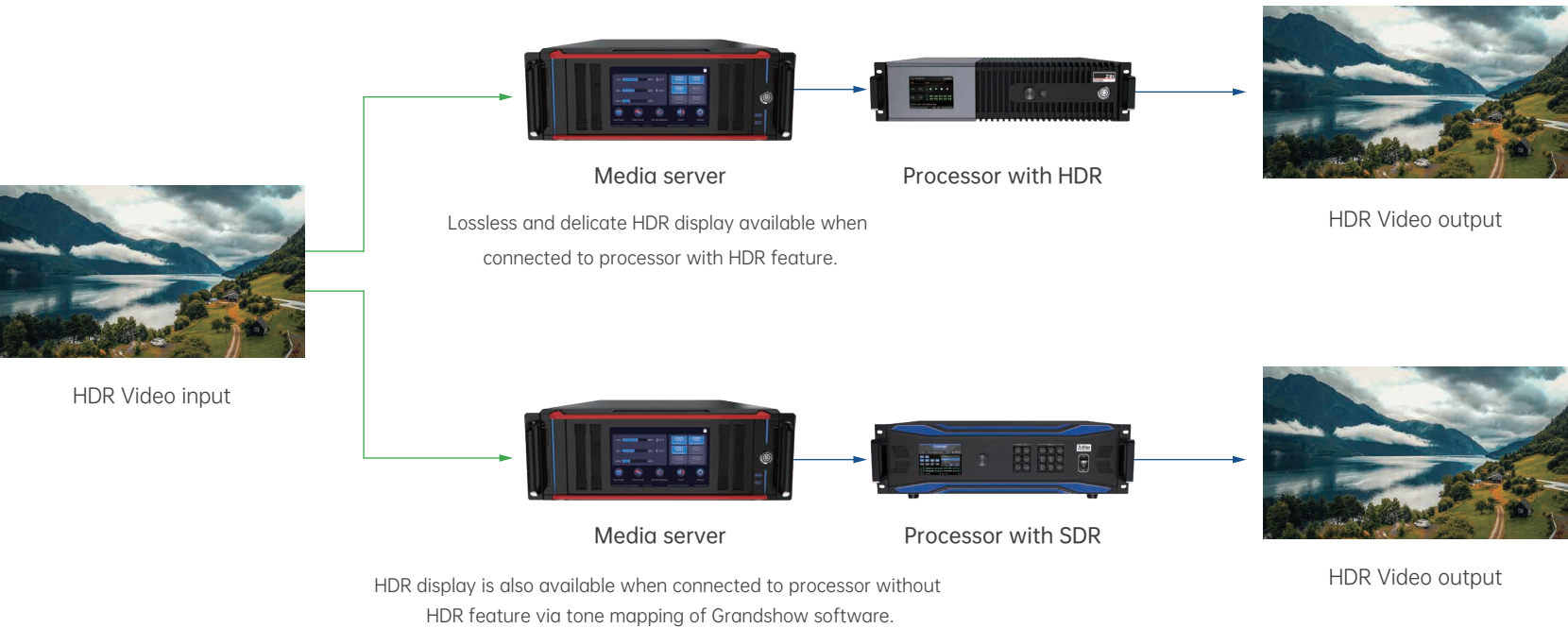
Display full screen or selected area according to the resolution of webpage

Embedded media playback

Playback of audio/video embedded in webpage

2.1.6 HDR Display

Wide color gamut, high dynamic range and high contrast. Delicate image with richer colors reveals the world in its vividness.



2.1.7 Sequence Frames Playback

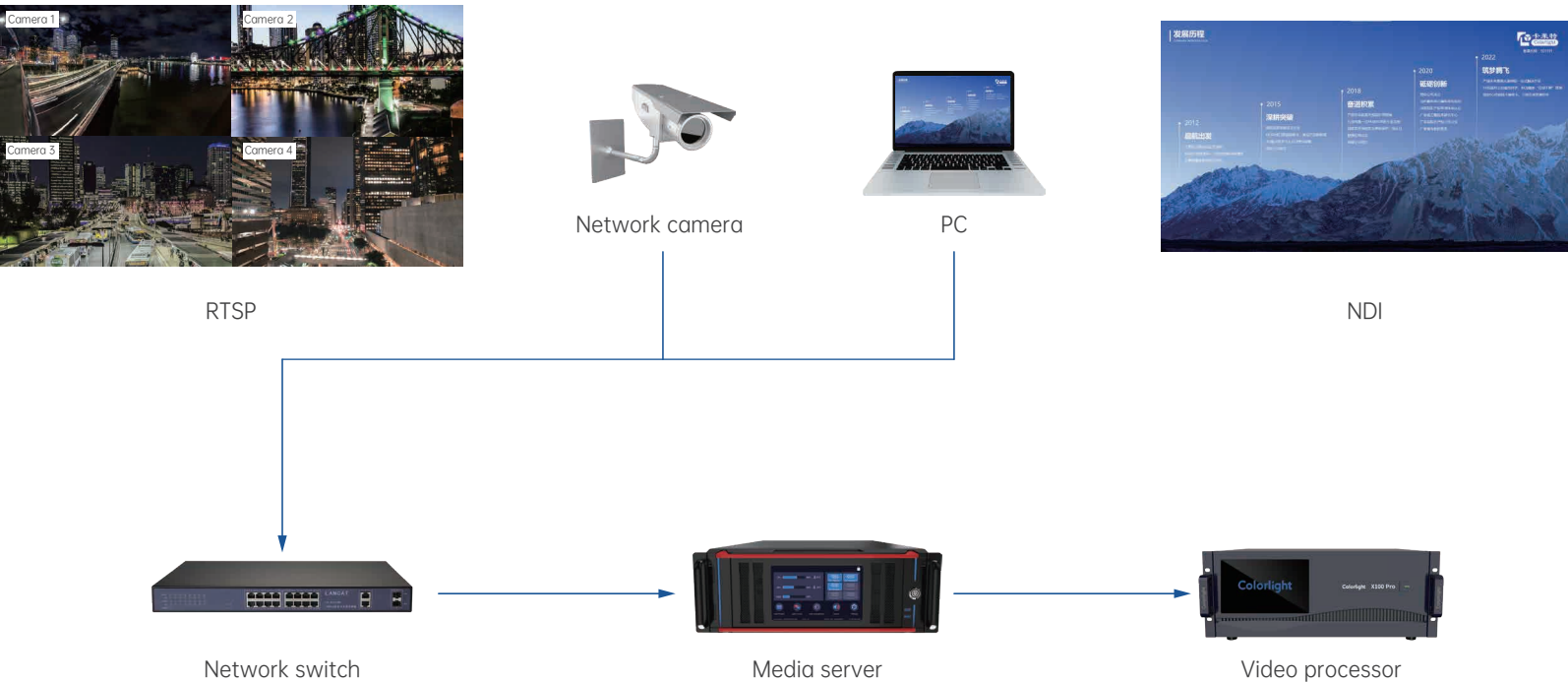
Various of lossless or even uncompressed image formats, ultra-high resolution images and high frame rate contents can be displayed to meet the marvelous display effect requirements of professionals.



*Sequence frames playback is supported by CS16K


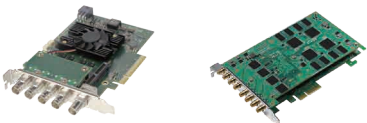


2.1.8 Live Video Capture

It is designed to capture NDI and RTSP network video streams with high bitrate and low latency. Real-time streams from PC and camera are also available.



2.1.9 Multiple Capture Card

Support different types of video inputs, such as HDMI, DVI, DP, SDI; Capable of multi-input simultaneous capture and 4K@60Hz, RGB 4:4:4 video capture.

Type	Input port	Description	CS4K	CS4K Pro	CS20-8K	CS20-8K Pro	CS16K	Figure
CP202-H2	HDMI	2K HDMI×2	⊘	⊘	✓	✓	✓	
CP202-H4		2K HDMI×4	⊘	⊘	✓	✓	✓	
CP4K1-H1L		4K HDMI × 1, with LOOP	⊘	⊘	✓	✓	⊘	
CP402-H2		4K HDMI×2	⊘	⊘	✓	✓	⊘	
CP208-H8		2K HDMI×8	⊘	⊘	⊘	✓	✓	
CP404-H4		4K HDMI×4	⊘	⊘	⊘	✓	✓	
CP204-S4	SDI	2K SDI×4	⊘	⊘	✓	✓	✓	
CP404-S4		4K SDI×4+1 Ref IN	⊘	⊘	⊘	✓	⊘	
CP208-S8		2K SDI×8(MINI SDI)	⊘	⊘	⊘	✓	⊘	
CP208-S8B		2K SDI×8(MINI SDI)	⊘	⊘	⊘	✓	⊘	
CP201-SD	Mixed	2K SDI or 2K DVI	✓	✓	✓	✓	✓	
CP401-HSP		4K HDMI or 4K DP or 2K DVI	⊘	⊘	✓	✓	⊘	
CP801-P1L	DP	8K DP×1, with LOOP	⊘	⊘	⊘	✓	✓	

2.1.10 Multi-layer Display

Free adding, overlaying and roaming of multiple layers.



2.1.11 Resource Collection

Collection of multiple media resources makes it easier to set specified playback order, transition effects and tour.

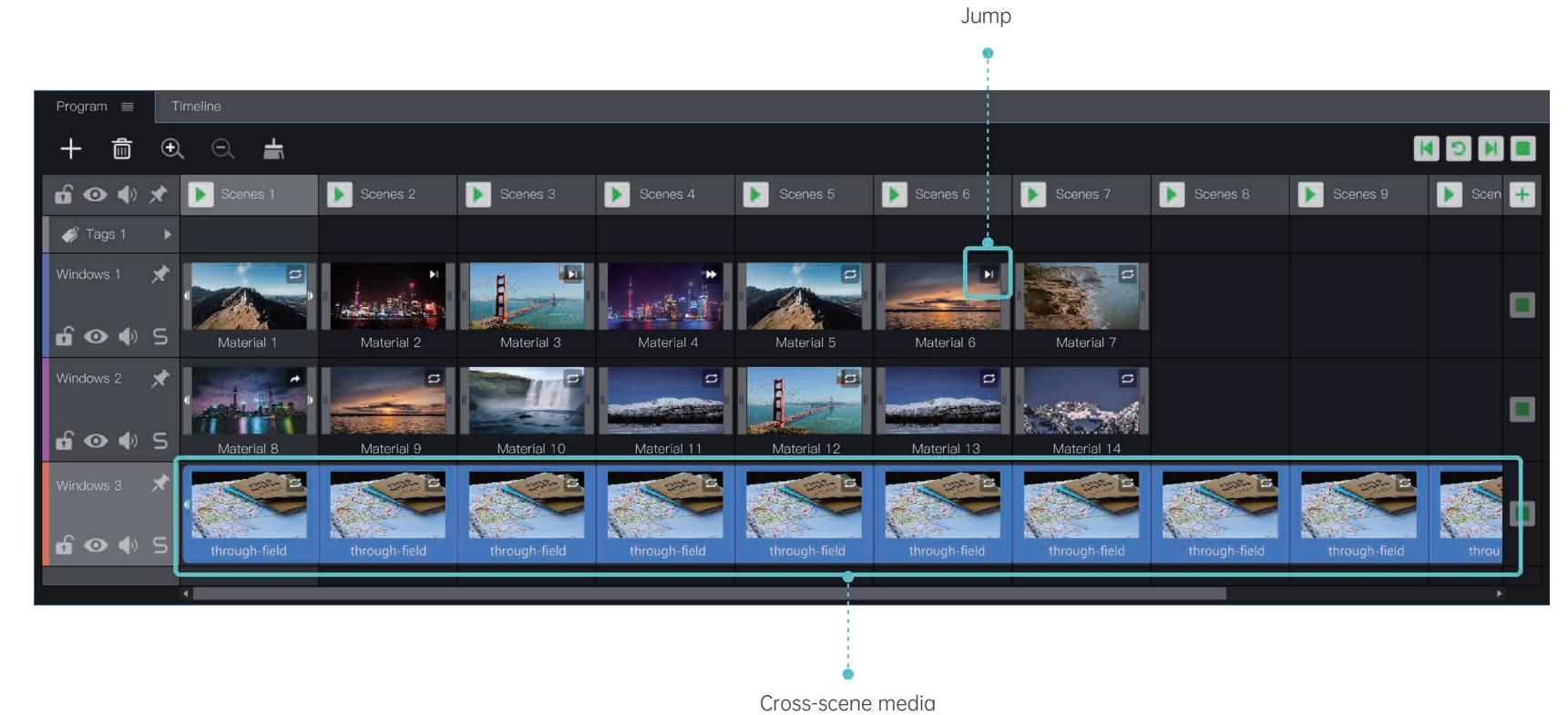


2.2 Control Method

Classic timeline management and easy-to-use interface of scene management meet user's requirement in different scenarios. Innovative function that combines timeline and layer creates more possibilities for program management.

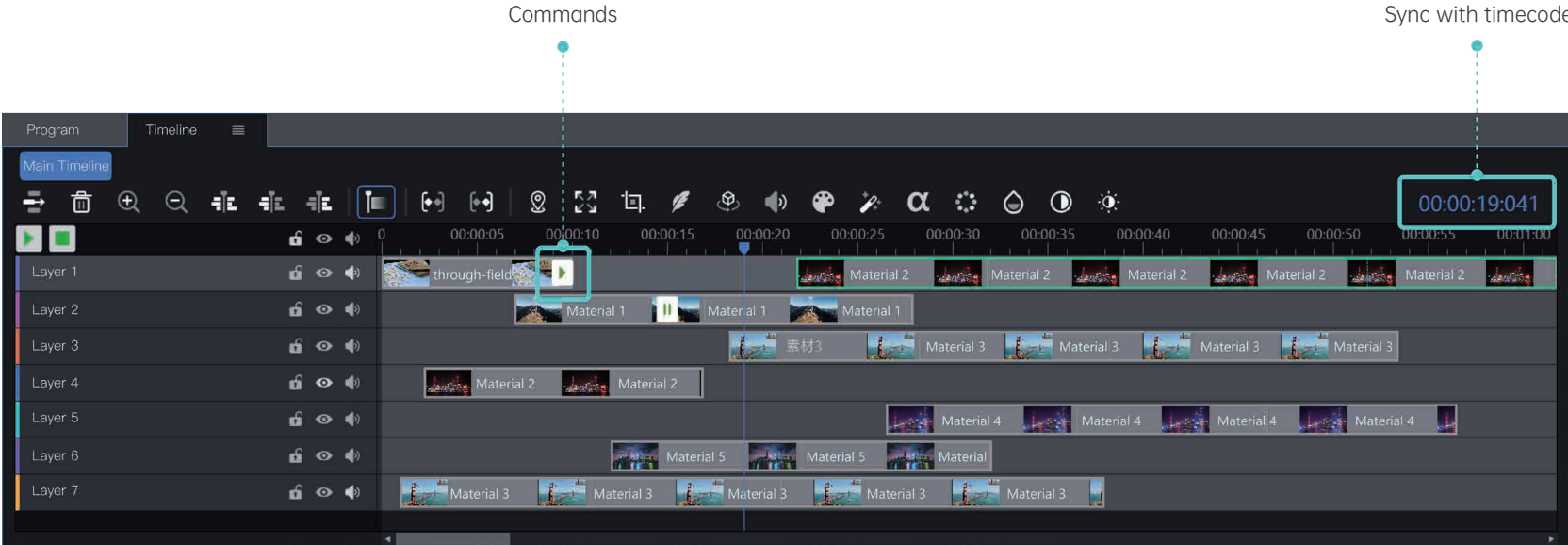
2.2.1 Scene Management

It helps arrange resources into multiple scenes as needed based on window. Scene switching can be achieved with one click or jump settings. Besides, cross-scene media can be played uninterruptedly during scene switching.



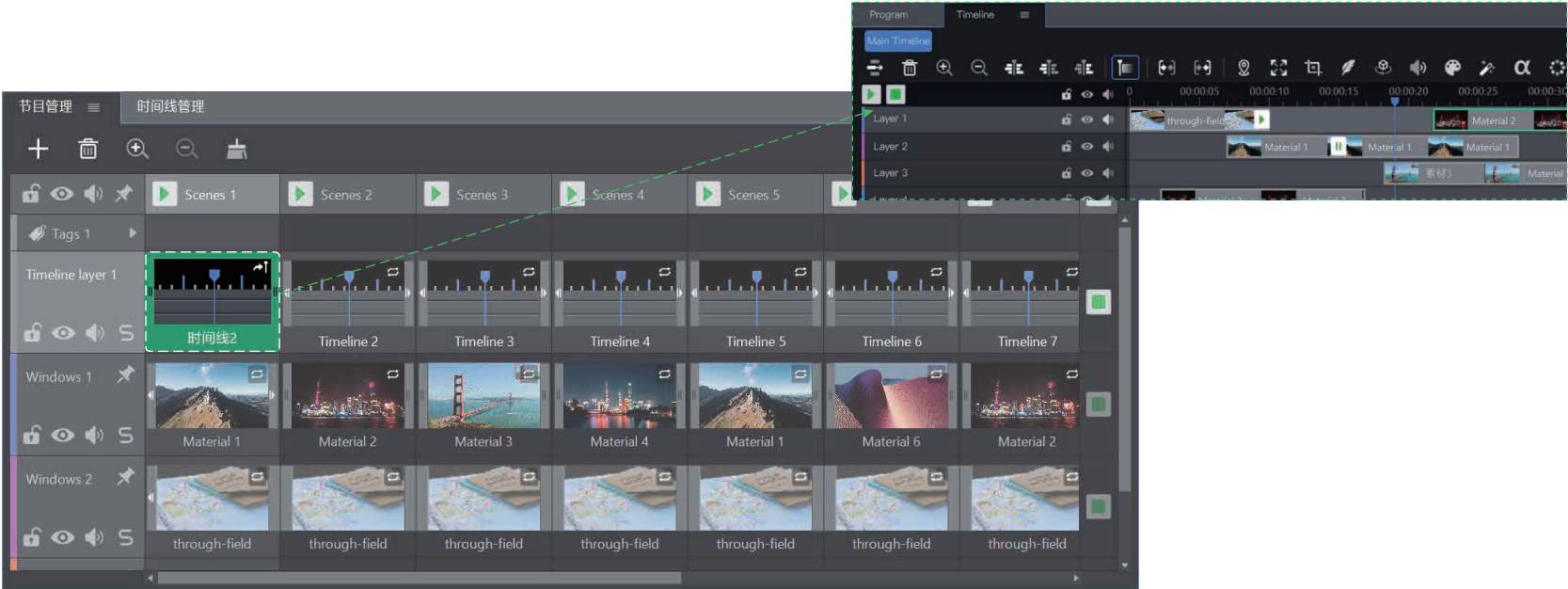
2.2.2 Timeline Management

Accurate playback via timeline management without layer limit; LTC, MTC timecode sync; Support commands, such as play, pause, stop and jump, which can be applied to control third-party devices.



2.2.3 Timeline & Program Combination

Timeline and program management can be combined to make the playback control more convenient and precise.



2.3 External Control

Connectable to various external devices, CS series server can communicate with and provide assistance to other equipment as a core device. It can also be controlled remotely to realize intelligent control in multiple scenarios.

2.3.1 APP Visualized Control

Use app on your Pad to control multiple devices effortlessly and realize real-time image monitoring. Applicable to digital exhibition, multimedia showroom, and other various scenarios of video playback and control.



2.3.2 Central Control

CS media server can receive commands and be controlled through central control; Or it can serve as a controller and send commands to control third-party devices.



2.3.3 Console

Media server can be controlled and managed along with lighting, stereo and other equipment via console, achieving effective stage management.



2.4 Creative Display

By slicing the output content, the conventional resources can be segmented and combined into creative resources of any shape. We will bring your imagination into reality!

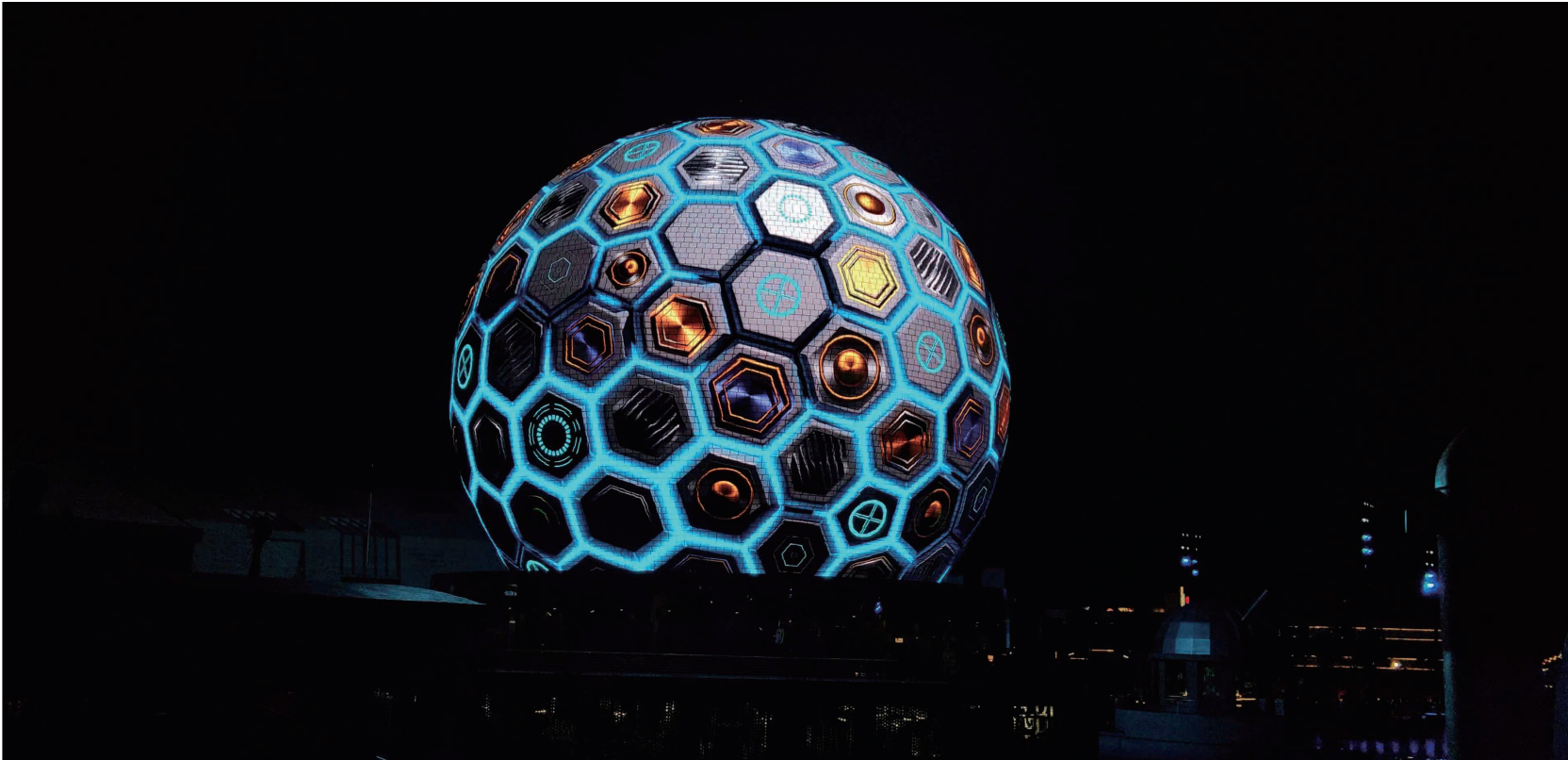
2.4.1 Ultra-long Screen Display

Support pixel-to-pixel ultra-long screen display with more than 100K pixels in stadiums or shopping malls.



2.4.2 Curved Screen

The media server fully utilizes high-performance hardware to slice, warp, rotate, stretch, and combine resources. With reconstruction algorithms, it adapts the normal resources to spherical, fan-shaped, extra-long and other creative LED screens without the need for customized resources.



2.4.3 Immersive Screen

The image display angle on the immersive screen is adjusted to the best point of view. There is no dislocation, stretching, deformation on the screen or tearing at the seams, delivering an immersive experience.



2.4.4 Irregular Display

Based on the custom display, the server supports the output of any irregular screen without image deformation.



2.4.5 Architectural Facade Display

Custom display can also be applied in architectural facade display of large-scale cultural tourism projects, enhancing the visual appeal of architectures.



2.5 Effects

A variety of video effects perfectly meet the professional needs in various application scenarios.

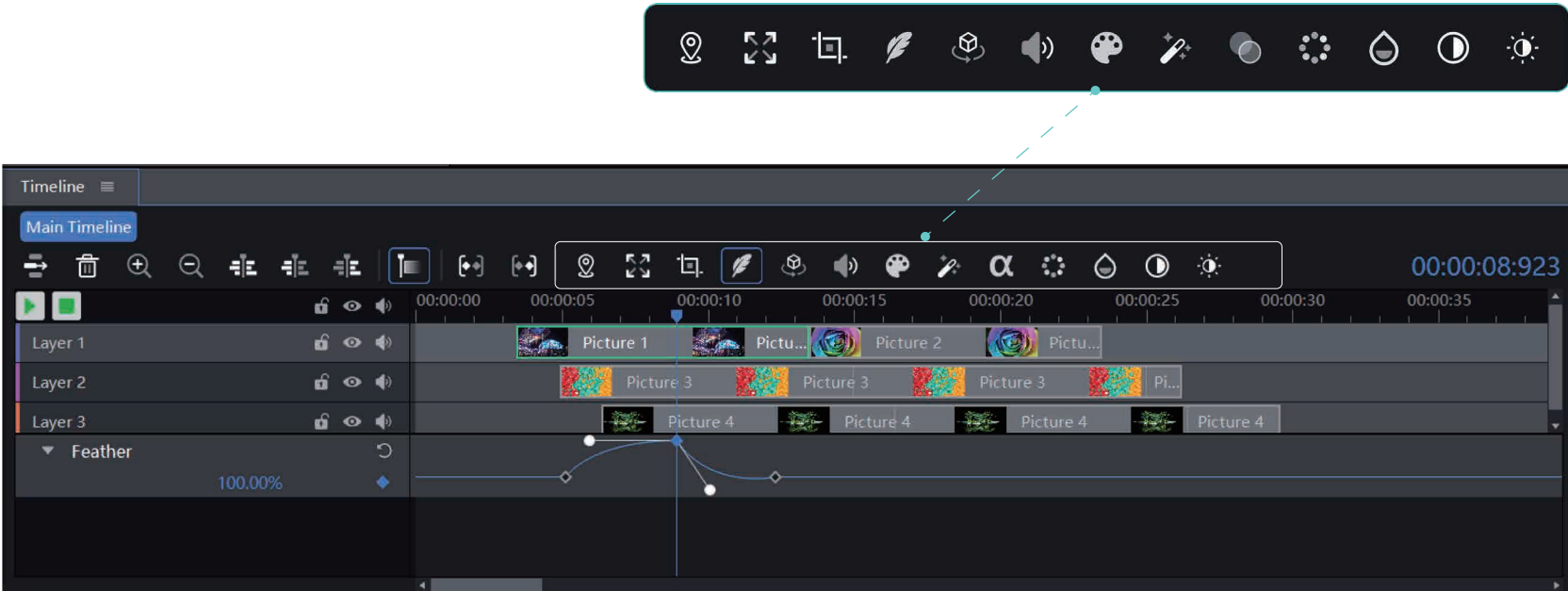
2.5.1 Window Effects

Dozens of built-in window effects including denoise, sharpen, blur, mosaic, etc. The image can be transformed at will, facilitating the creation of a stunning stage.



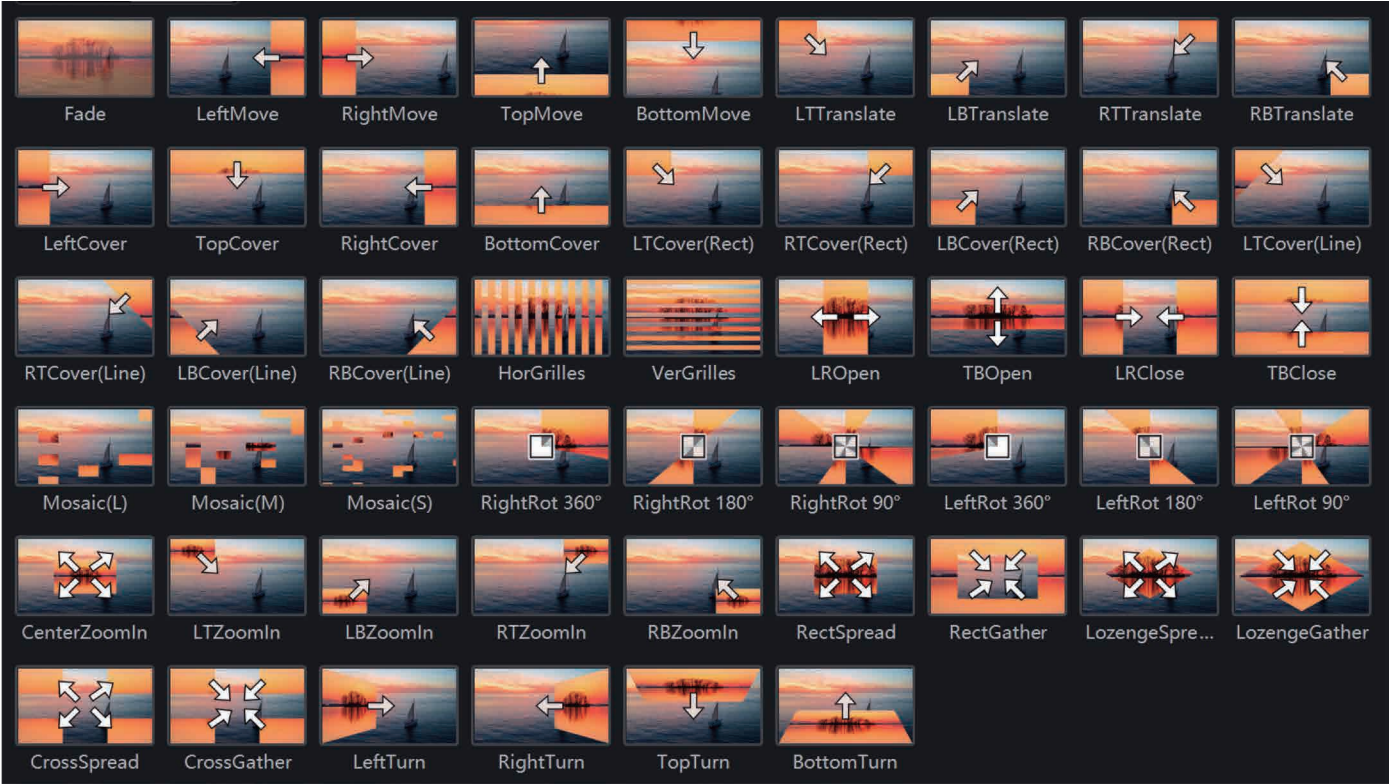
2.5.2 Timeline Effect Editing

The timeline supports more than ten visual effects, such as position, zoom, and cropping. Effects parameters can be edited along bezier curve, bringing an artistic touch.



2.5.3 Timeline Transition Effects

Support transition effects during program switching, such as crossfade, translate, cover, etc., making the image transition natural and lively.

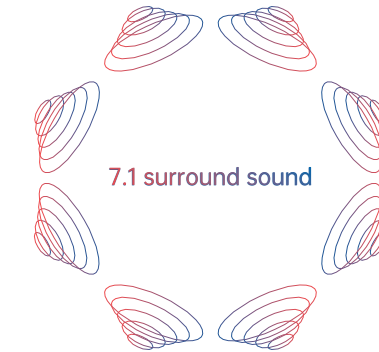


2.6 Audio Management

Featuring 7.1 surround sound and audio channel assignment, the audio management solution immerses listeners in sound and image from all around.

2.6.1 Immersive Audio

7.1 surround sound offers a premium sound effect and envelops you in sound from all directions, giving you more in-depth, immersive, and true-to-life experiences.



2.6.2 Separate Audio Channel Management

Image and audio are managed separately on a single server while each media has its corresponding audio channel.

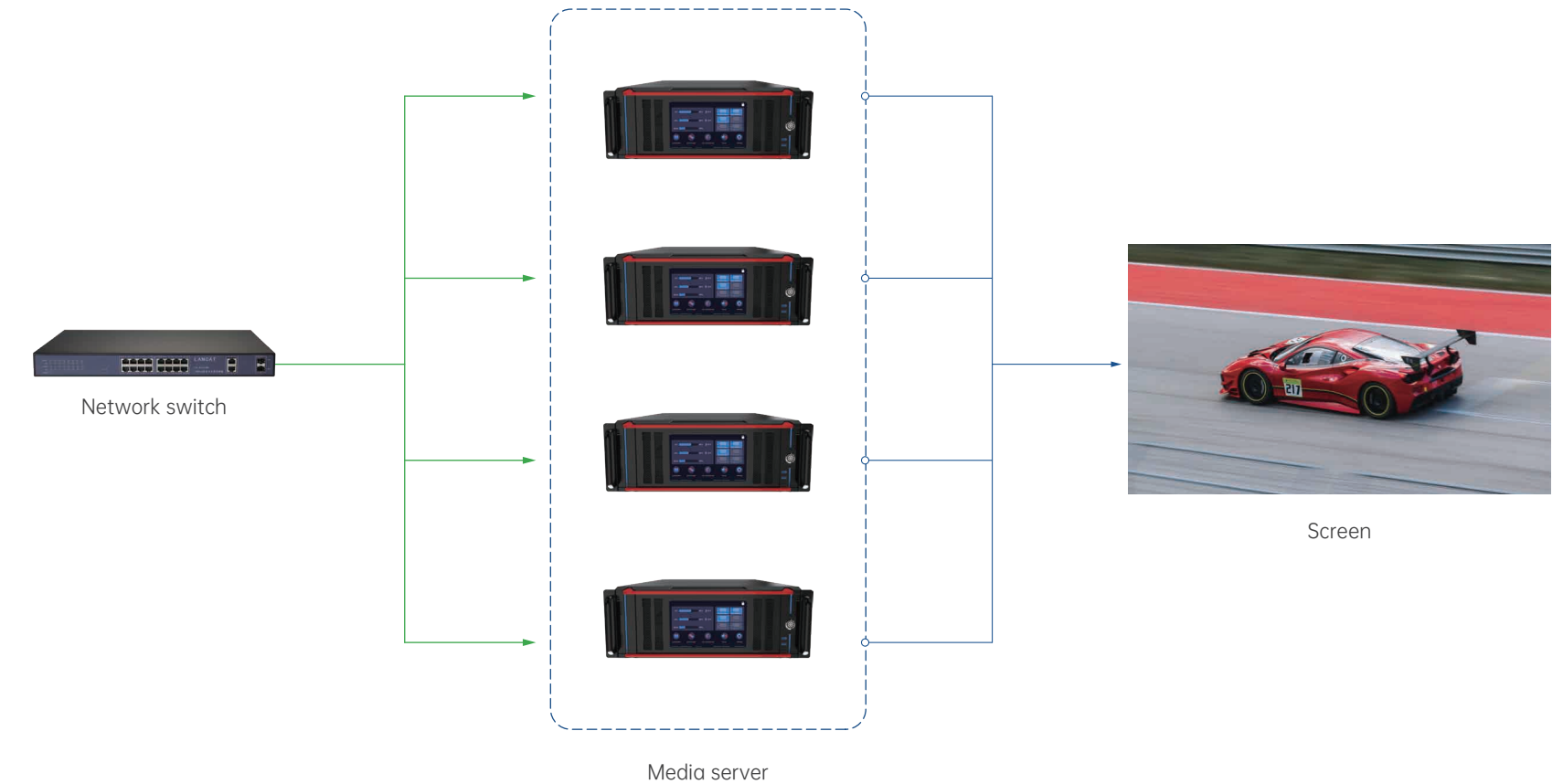


2.7 Multi-server Management

Dozens of clustered servers are coordinated and controlled in an integrated manner, providing sufficient stability for large media playback projects.

2.7.1 Frame Sync

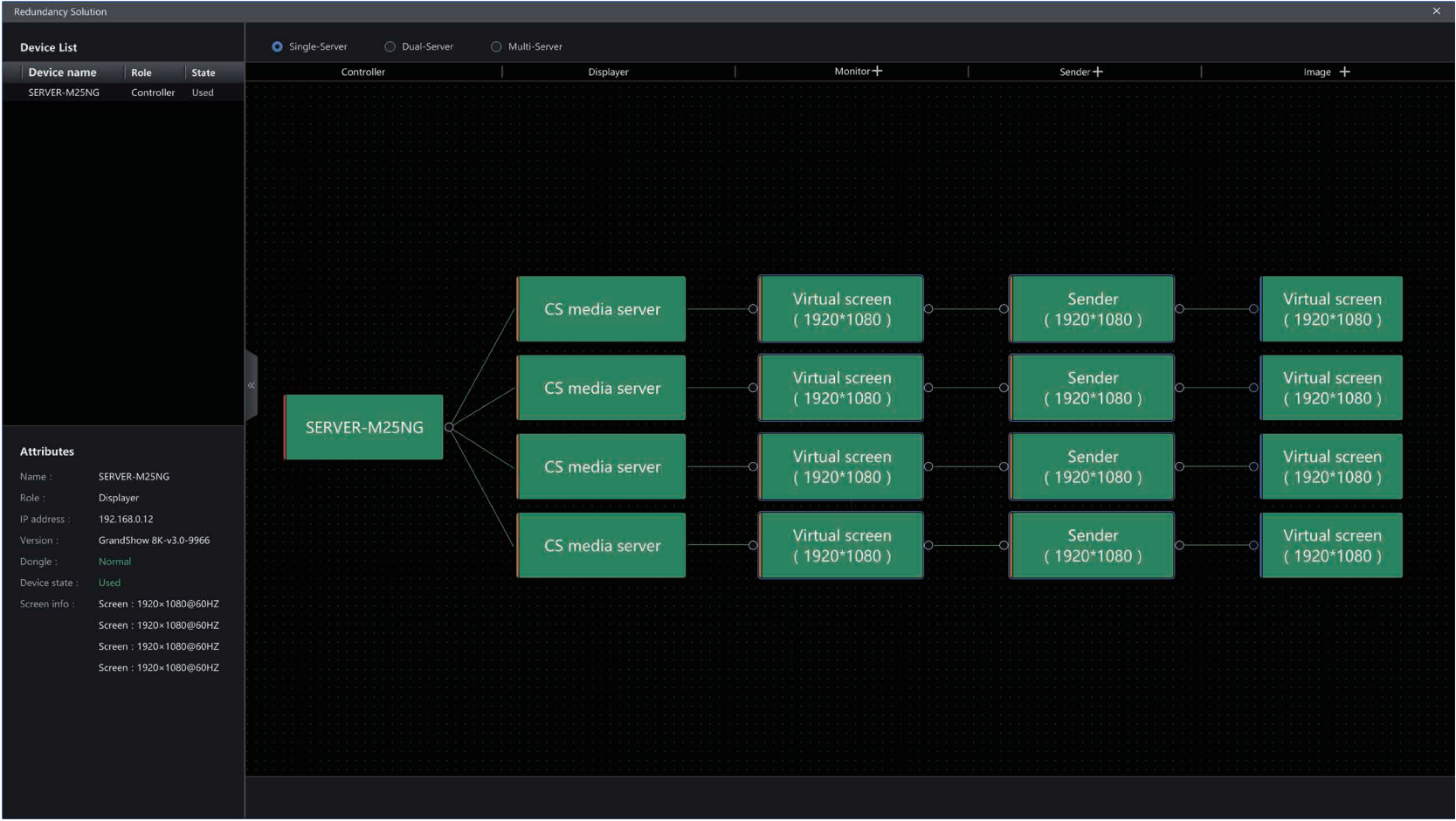
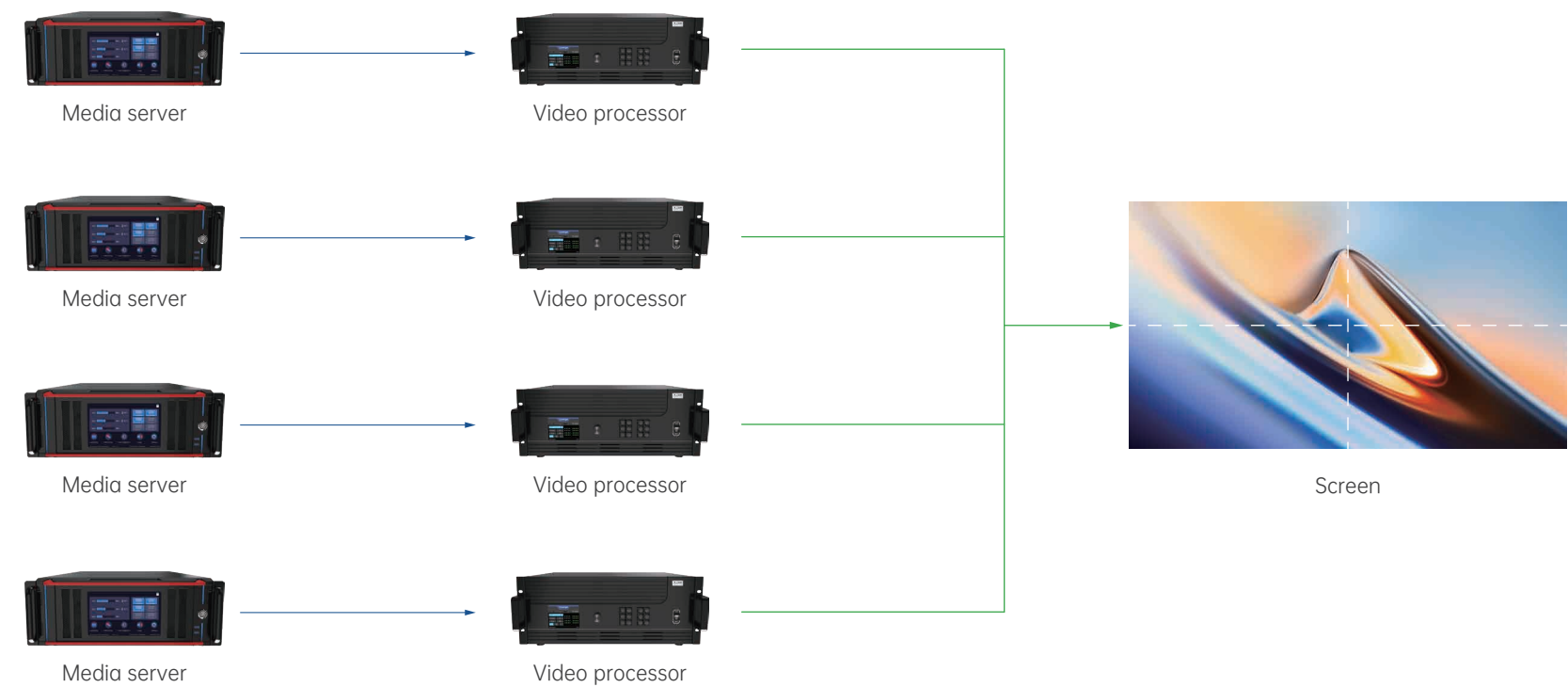
With the unique GrandShow Sync technology of Colorlight, dozens of media servers can output ultra-high resolution videos with accurate frame sync.



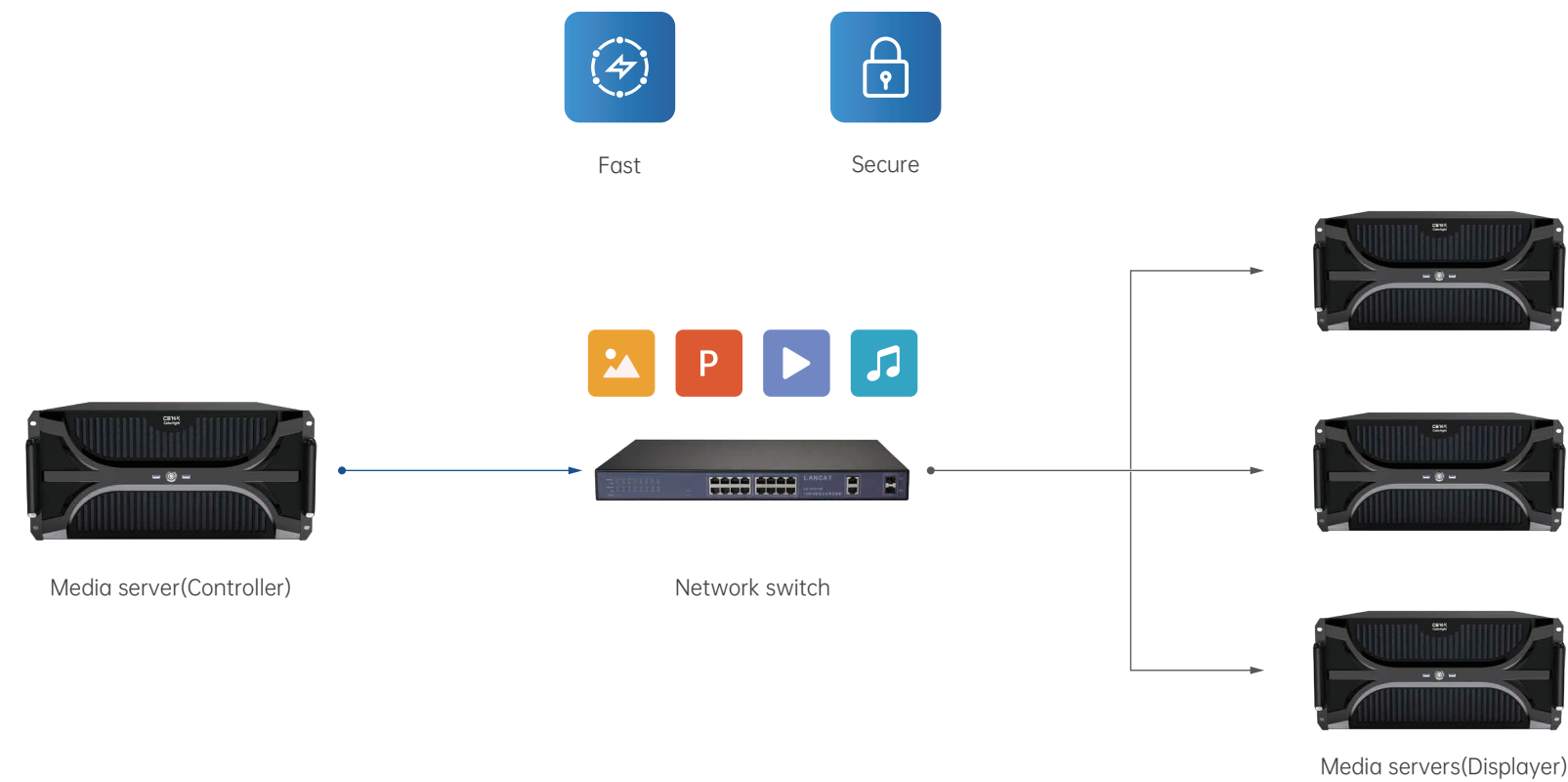
*Frame Sync is supported by CS20-8K Pro(with sync card) and CS16K.

2.7.2 Solution Topology

Colorlight's unique solution topology in the industry can be applied for fast solution design in complex situations.



2.7.3 Distribute Resources via Internet



2.7.4 Multi-server Status Management

Grandshow manages each server of the system in a visual manner, displaying the performance data of the servers and the status information of the output ports in real time.

Devices

▼ DESKTOP-029JG3L (Local)

CPU : 66% GPU : 20.0% MEM : 3.5%

▶ Screen1

1920×1080

Added (Opened)

Port 1

1920×1080

▶ Screen2

1920×1080

Added (Opened)

Port 2

1920×1080

▶ Screen3

1920×1080

Added (Opened)

▶ Screen4

1920×1080

Added (Unavailable)

Port3

1920×1080

▶ DESKTOP-379SP4K

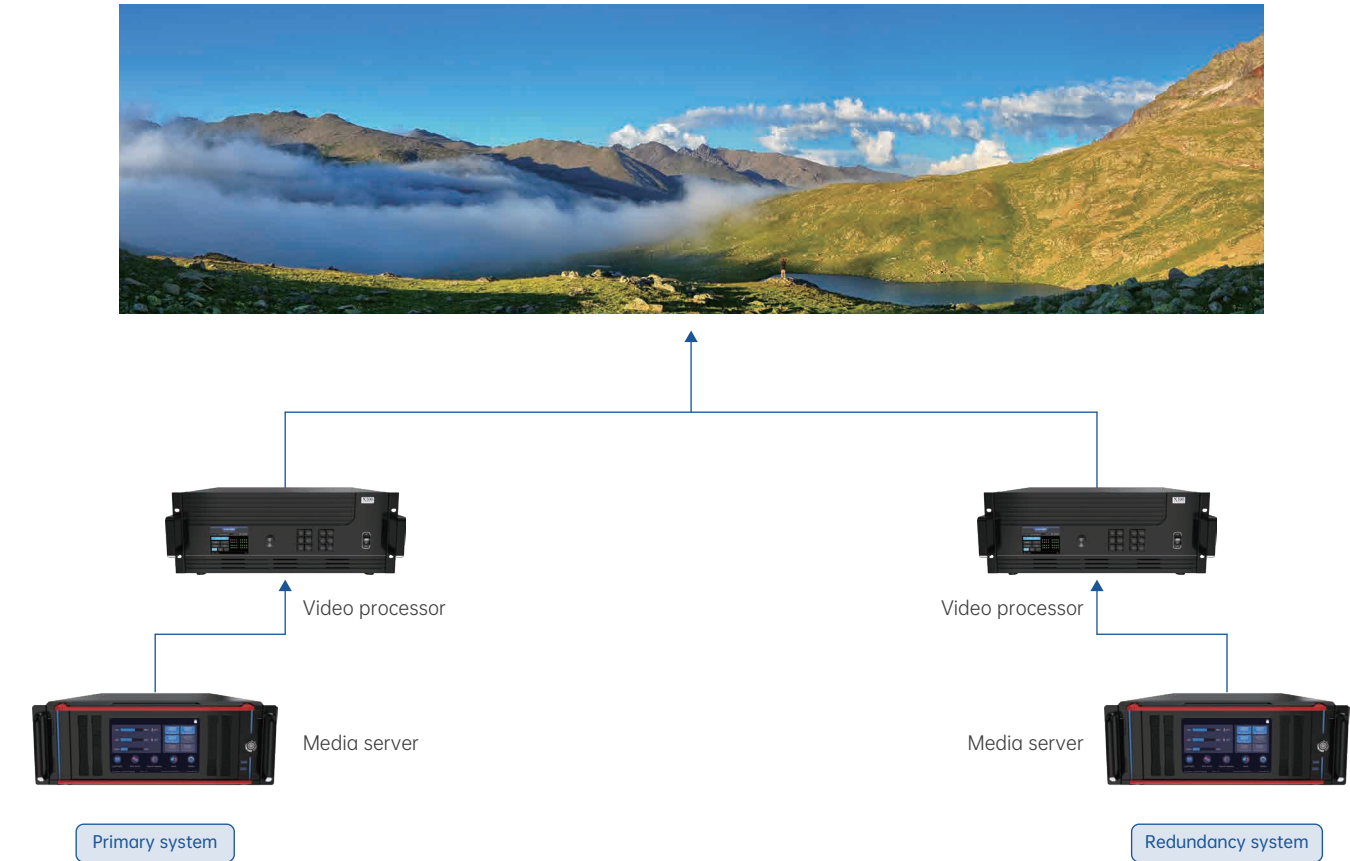
▶ DESKTOP-379SWPRTBP4K

2.8 Redundancy

Well-designed redundancy plan ensures higher stability, security, and fault tolerance. To back up data safely and effectively, reliable topology and management methods are essential to the redundancy solution.

2.8.1 Stable Redundancy Solution

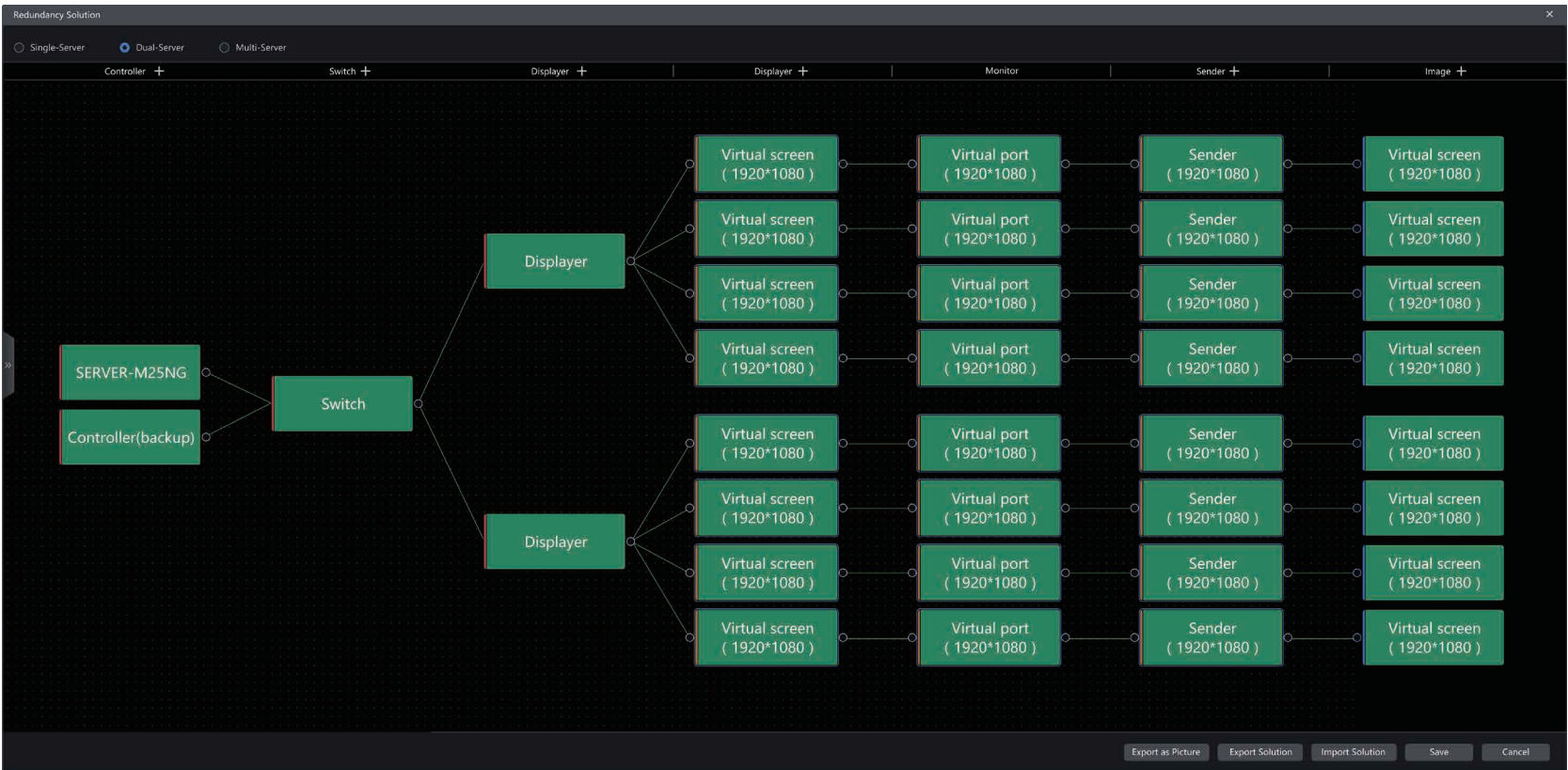
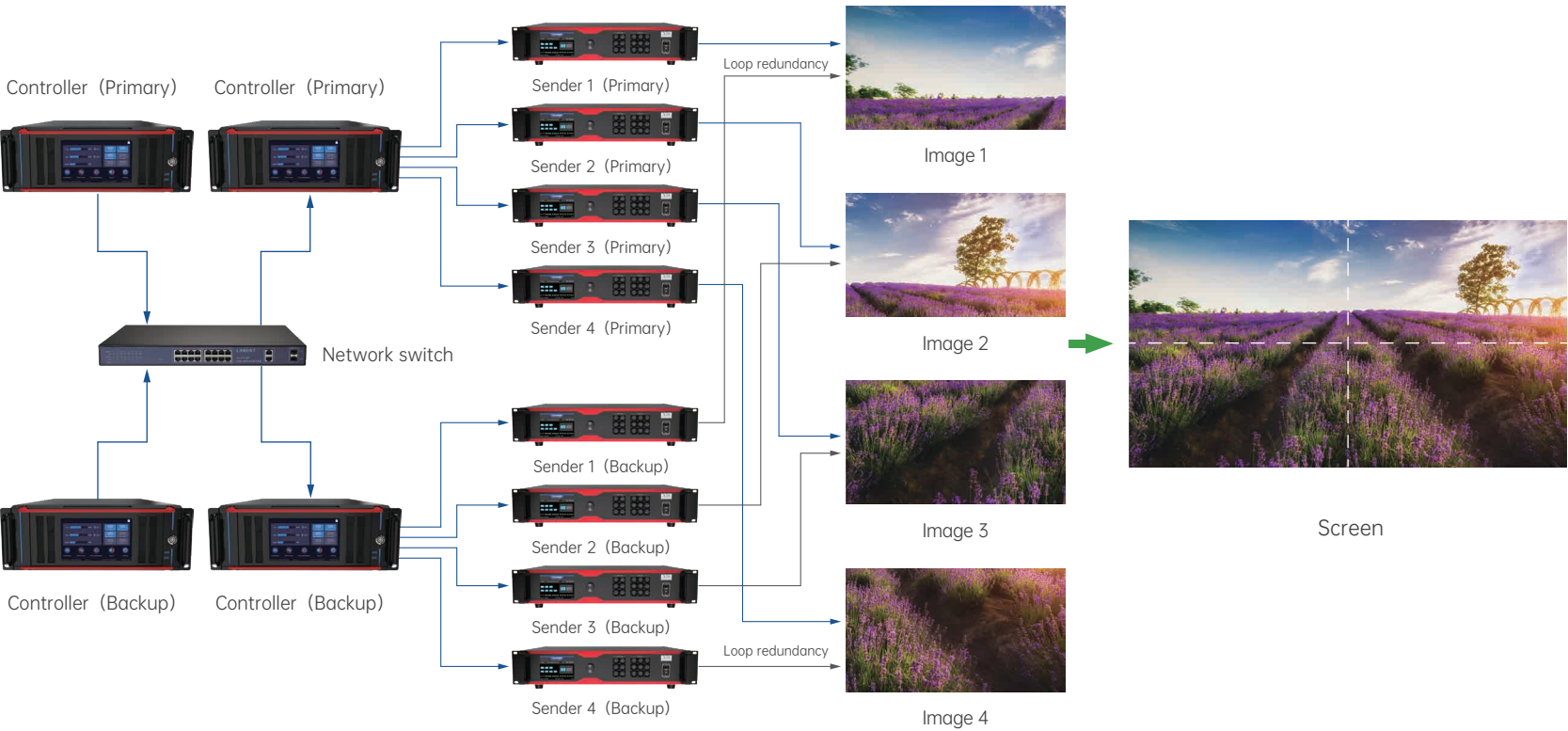
The primary server transfers control automatically in case of failure without screen flickering or blackout, ensuring screen normal output and successful project implementation.



*Seamless switching of redundancy solution is supported by CS20-8K Pro(with sync card) and CS16K.

2.8.2 Redundancy Topology

Colorlight's unique redundancy topology in the industry can manage all output ports in the redundancy system, and display the backup status of each output port in real time.

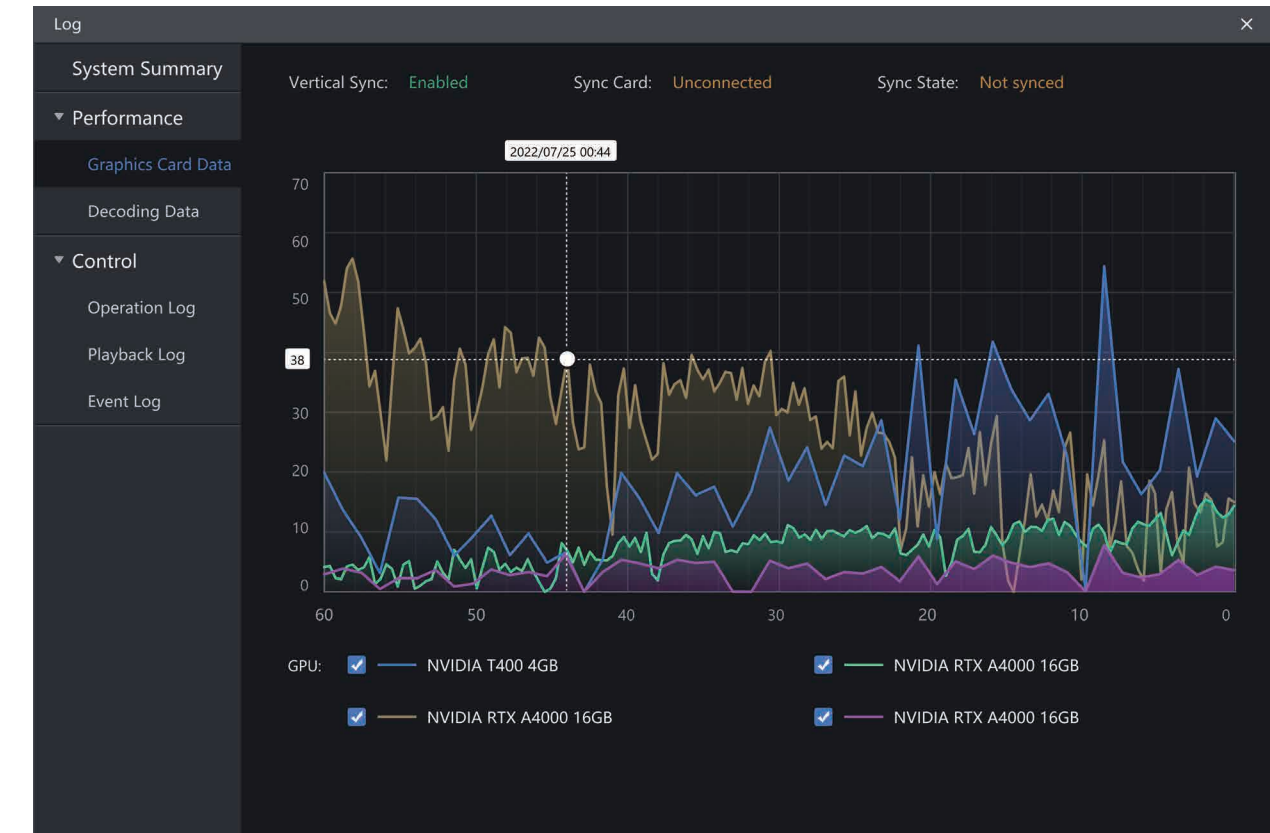


2.9 Logs

The operating status and use of servers are stored locally on the device for checking and statistical purposes.

2.9.1 Performance Log

This log provides real-time performance data of devices for operating load analysis.



2.9.2 Operation Log

This log records all operations after the software is opened. User can ensure that server is running safely by viewing related data.

Log

System Summary

▼ Performance

Graphics Card Data

Decoding Data

▼ Control

Operation Log

Playback Log

Event Log

Today

Last 24 Hours

Last 3 Days

Last 7 Days

2021/12/27 00:00:00

~

2021/12/29 24:00:00

Query

Time	Section	Function	Description
2022-12-29 22:58	Global	Start Software	/
2022-12-29 22:58	Global	Environment	/
2022-12-29 22:58	Global	Environment	/
2022-12-29 22:58	Global	Environment	/
2022-12-29 22:58	Global	Add	/
2022-12-29 22:58	Resources	Add right-click	/
2022-12-29 22:58	Resources	Add	/
2022-12-29 22:58	Resources	Addsuccessfully	/
2022-12-29 22:58	Resources	Addsuccessfully	/
2022-12-29 22:58	Management	Start Software	/

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Export

Clear

2.9.3 Playback Log

This log provides statistical results of media playback duration and count. Accurate program playback data is greatly useful for advertisement delivery and operation.

Log

System Summary

▼ Performance

Graphics Card Data

Decoding Data

▼ Control

Operation Log

Playback Log

Event Log

Today

Last 24 Hours

Last 3 Days

Last 7 Days

2021/12/27 00:00:00

~

2021/12/30 00:00:00

Detail

Statistics

File Name	Type	File Duration	Play Duration	Playback Count
Racing car.mp4	Video	00:50:26	00:00:58	10
8K video.mp4	Video	00:50:26	00:00:58	8
Xiaomi ad.mp4	Video	00:50:26	00:00:58	6
Huawei ad 123.mp4	Video	00:50:26	00:00:58	0

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03 Application

Gallery	54
Stage Performance	55
Museum	56
Exhibition	57

Gallery



Stage Performance



Museum



Exhibition

