Hanwha Vision

WISENET WAVE

Video Management System

Wisenet WAVE **Video Management System**

Simple. Reliable. Customizable.

Wisenet WAVE VMS features a very unique adaptive scaling technology that dynamically switches between the high resolution and low resolution images depending on the CPU usage of the client PC resulting in an endlessly customizable IP video management platform for users and platforms of all sizes and devices.

Intuitive and Easy to Use

- ☑ Design and create your own custom live and recorded camera viewing workspaces with an intuitive drag and drop tool.
- ☑ Quick access to on demand zoom windows to see close up details of live and recorded activity.
- ☑ Generate alerts and alarm notifications when specific motion detection or analytic triggered incidents occur.
- ☑ Locate important video with ease with interactive flex timeline and powerful range of analytic based search tools for recorded video.
- ☑ Nested search based navigation menu to identify connected cameras and layouts.
- ☑ Bird's eye view of all cameras using built in background map imagery.
- ☑ Consolidated notification panel for dedicated alarm management.

Hanwha Vision Specific Features
Deep camera integrations and NVR monitoring, search & playback

- • H.265
- • WiseStream
- • All triggering events including sound classification and loitering
- • Simple Focus / Initialize Focus / Lens Control settings
- • Multi-directional camera support

- • Hallway view
- • Camera profile / image configuration
- • PTZ preset Sync
- • Imagery Settings
- • Auto & HTTP discovery
- • Digital I/O

SUNAPI 2.0 Native Integration
WAVE utilizes the latest SUNAPI 2.0 driver for seamless interaction with Wisenet cameras and recorders. Rigorously tested with Wisenet P, X and Q series and supports:

- • Video/Audio streaming
- • PTZ
- • Event - advanced analytics, MD, alarm
- • Device configurations

Optimized for the operating system of your choice

Wisenet WAVE has applications for all major operating systems so users are not limited by what device or operating system they choose to use on their desktops, mobile devices, rack mount servers, or even low-powered embedded devices. (For embedded devices, please contact Hanwha Vision support)

Server
A cloud-based service that enables simple, centralized remote access and insight into any Wisenet WAVE system. Merge systems, transfer ownership and view cameras on demand included.

Desktop
A lightweight rich media player with enterprise level features to view and manage a single Wisenet WAVE system from desktop or laptop PC.

WAVE Sync
A media server responsible for discovering, connecting to, and managing system devices and data.

Mobile
A mobile app designed for viewing Wisenet WAVE system video and archives while on-the-go.

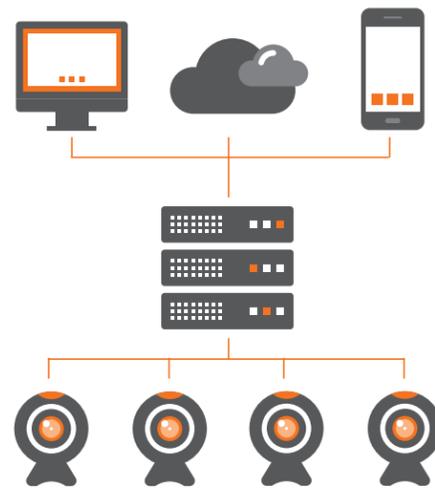| Server OS Support	Desktop OS Support	Supported Browsers	Mobile OS Support
Microsoft Windows	Microsoft Windows	Google Chrome	Google Android
Ubuntu Linux	Ubuntu Linux	Mozilla Firefox	Apple iOS
	Apple macOS	Opera / Opera Noon	
		Microsoft Edge	
		Apple Safari	

Server

Lightweight. Powerful. Server Hive.

The Wisenet WAVE server application is the foundation of the entire platform - with the ability to operate independently or as one part of a hive.

It's available as a downloadable software application from the Hanwha Vision website which enables installers to quickly download, install and configure the full solution in minutes.

The server application also provides a detail user audit trail including viewing and exporting as well as real-time health and storage monitoring and camera failover support. The supporting web-based application enables each Wisenet WAVE platform to be managed as a stand alone system or as part of a larger, scalable video management solution.

Server Hive
Connect to any server with any client.

- ☑ **Instant synchronization**
- ☑ **No single point of failure**
- ☑ **Automatic failover**
- ☑ **One-click upgrades**

Features

Discover	Manage	View	Integrate
IP Cameras (ONVIF, Custom)	IP Cameras / NVRs / DVRs	Live Video (adaptive)	HTTP Generic Events
RTSP/HTTP Streams	Advanced Routing	Recorded Video (adaptive)	HTTP Request-as-an-Action
I/O Devices	Storage (HDD/NAS/DAS)	Server Health	Server API
Servers / Systems	Events & Rules Engine	Log Files	Storage SDK
SAMBA NAS	Failover	Audit Trail	Video Source SDK
	Transcoding	Storage Status	Any Device or System
	HTTPS & Encrypted video traffic		Metadata SDK & Plugins
	Server sycnhronized system data real time		

Supported Operating Systems

Windows 8, Windows 8.1, Windows 10, Windows 11, Windows Server 2012, Windows Server 2012 R2, Windows Server 2016 (Long-term Service Channel) 1607, Windows Server 2019, Windows Server 2022

Ubuntu Linux 16.04 LTS, Ubuntu Linux 18.04 LTS, Ubuntu Linux 20.04 LTS

Specifications

Supported Media Streaming	
Live Streams	Video: H.265, H.264, MJPEG
	Audio: AAC PCM (Mu-Law, A-Law) g726 MP3
Live Streams (Available to pull from Server to 3rd Party)	Video: H.265, H.264, MJPEG, WebM
	Audio: AAC PCM (Mu-Law, A-Law) g726 MP3
	Protocols: RTSP MJPEG WebM HLS

Other	
Automatic Camera Failover	~1 Min. Configurable
Transcoding	Supported (For Web Client, Mobile, API)
Database	SQLITE + Proprietary Archive Index
Single Sign On	LDAP / Active Directory
Security	Open SSL Salted MD5 Hash TLS/SSL HTTPS
Dev tools	Server API (HTTP) / Video source SDK / Storage SDK / Metadata SDK
NAS	SAMBA (Authenticated, Unauthenticated)

Scalability	
# of Resources per System:	10,000
# of Clients per System:	Unlimited
# of Streams per Server:	128
# of Servers in a Server Hive:	100 (100 is a recommended maximum. Contact technical support for more info).
# of Users in a System:	1,000

Hardware Recommendations				
Recommended based on # of Streams	Streams	RAM	NIC	CPU*
	Up to 16	2 GB	1 GB	Dual Core Atom
	Up to 32	4 GB	1 GB	Dual Core Atom
	Up to 64	8 GB	1 GB	Core i3
	Up to 128	16 GB	1 GB	Core i3
	*CPUs data correct at time of print.			

Desktop

Feature-rich flexibility

Wisenet WAVE Desktop is a cross-platform lightweight app capable of running seamlessly on a variety of devices, ranging from Atom-based tablets to Xeon-based servers. Designed exclusively for video-centric and investigative users, it offers a rich feature set that caters to their specific needs. With its user-friendly interface, reliability, and impressive performance, Wisenet WAVE Desktop provides an optimal solution for efficient and effective video management.

Supported Operating Systems

Windows 8, Windows 8.1, Windows 10, Windows 11, Windows Server 2012, Windows Server 2012 R2, Windows Server 2016 (Long-term Service Channel) 1607, Windows Server 2019, Windows Server 2022

Ubuntu Linux 16.04 LTS, Ubuntu Linux 18.04 LTS, Ubuntu Linux 20.04 LTS

macOS Mojave 10.14, macOS Catalina 10.15, macOS Big Sur 11, macOS Monterey 12

Specifications

Supported Media Playback On Grid	
Live Streams	Codecs: H.265 H.264 MJPEG
Offline Media	Videos: AVI MKV MP4 MOV TS M2TS MPEG MPG FLV WMV 3GP
	Images: JPG PNG GIF BMP TIFF
Connected Devices	I/O Devices: Status and Triggers
	Servers: Server Health Monitoring
Browser	Web Pages: Responsive Websites / Progressive Web Apps
Viewing Modes	
Media Player	View, edit, and export offline videos and images
Connected	Authorized and connected WAVE System
VideoWall	Put Desktop into VideoWall mode to control remotely
Showreel	Cycle tour any camera view or layout in a fully customizable timed viewing
Maximum # of Grid Items	
64 Bit OS	64 Items (e.g. 64 live streams)
Hardware Requirements	
Minimum Supported Specs	Hard Drive: HDD/SSD/mSATA, RAM: 2GB, CPU: Quad Core Intel Celeron CPU or higher Graphics: Intel HD Graphics 3000 w/ Open GL2.1 support, Networking: 1GB NIC
Performance Specs	Hard Drive: Performance SSD, RAM: 16GB RAM, CPU: Intel Core i5 Graphics: NVIDIA GeForce GTX 1050 (OpenGL2.1 support is required) Networking: 10 GB NIC
Multi Language Support	Languages Supported: English (US), English (UK), French, Czech, German, Finnish, Russian, Spanish, Italian, Japanese, Korean, Turkish, Chinese (Simplified), Chinese (Traditional), Hebrew, Hungarian, Dutch (Belgium) or Flemish, Dutch (Netherlands), Norwegian, Polish, Portuguese (Brazil), Portuguese (Portugal), Ukrainian, Vietnamese, Thai, Swedish

Features

Usability	Media	Configuration	Search
Drag & Drop Everything	IP Cameras / Encoders / DVRs	Events & Rules Engine	Motion Search
Consolidated Notifications	RTSP/HTTP Streams	User Management	Keyword Search
Flex Timeline	I/O Devices	IP Cameras / Encoders	Calendar Search
Customizable Layouts	Web Pages	Server Management	Time-Slice Search
Digital Maps	Videos	I/O Device Management	Bookmarks
Adaptive Scaling	Images	Storage Management	Audit Trail
Synchronized recorded playback across systems		Easy Camera Replacement	Thumbnail Scrub Searching
Quick video exporting in AVI, MP4 or embedded EXE formats		Remote Log Retrieval	

WAVE Sync

Simply connect, view, manage and scale.

WAVE Sync makes it easy to connect and view cameras across systems, merge sites, transfer ownership and configure Systems for easy to use enterprise level management. It is a public cloud-based application hosted by Amazon AWS which eables remote access by an unlimited number of authorized users from anywhere in the world.

Wisenet WAVE Sync Browser & Devices Interface

☑ **Cloud Connect**
- Connect any Wisenet WAVE System for simple remote connectivity from anywhere using NAT Traversal and Cloud Data Proxy technology.

☑ **User Management**
- Add an unlimited number of users to a single Wisenet WAVE Sync System.
- Share access to your Wisenet WAVE system in seconds using only email addresses.
- Create custom user groups and permission to quickly assign access to multiple Wisenet WAVE Sync connected systems.

Features

View	Manage	Scalability / Integration	Licensing
Live Video (adaptive)	System Settings	Unlimited # of Systems	Online activation for any license type
Recorded Video (adaptive)	User Permissions	Unlimited # of Users	
Camera Details	Cloud Connections	Unlimited # of Devices	
Keyword Search	Email Notifications	Cloud API	
Calendar Search	Cloud System Merge		
Flex Timeline			
Full Screen Functionality			

The technical framework. How it all works.

Wisenet WAVE applications (Server, Desktop, Mobile) connect via an active internet connection to the Wisenet WAVE Sync (Cloud) and are automatically connected together using a combination of NAT Traversal (direct connection) and data proxy technologies (connected via Wisenet WAVE Sync).

step **1** Create Wisenet WAVE Sync Account

step **2** Follow the on screen prompts to connect your account to an existing Wisenet WAVE System.

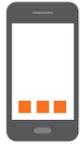step **3** View & Manage all connected system from anywhere.

Supported Web Browsers

Google Chrome　　Mozilla Firefox　　Opera/Opera Neon　　Microsoft Edge　　Apple Safari

Specifications

SPECS	
Connectivity	NAT Traversal: Connect directly to proxied Wisenet WAVE servers
	Cloud Data Proxy: Connect via AWS cloud proxy service
Interface Tabs	Systems: View connected system tiles
	Settings: View users / rename system / merge system / disconnect system
	View: Use Wisenet WAVE sync client to view live or recorded video
	Monitoring: Active monitoring of CPU, RAM, Storage and network resource activity
	Information: View system health alerts including server statistics, camera connectivity, recording status, event availability, storage status and network traffic
Security	
Secure Password Recovery:	Via email
HTTPS:	Open SSL encrypted server / client / cloud connections
Email:	TLS (Transport Layer Security)
Passwords:	Complex multi-level hash
Developer Tools	
Cloud API	Available upon request
Scalability	
# of Connected Systems	Unlimited
# of Users	Unlimited

Mobile

Smart Phone. Smart Video.

Wisenet WAVE Mobile is a user-friendly mobile application available for both iOS and Android devices. With a custom-developed media player, this low-latency app allows users to seamlessly connect to, view, search, and control IP cameras over Wi-Fi or data networks. Whether you're on-site or on the move, Wisenet WAVE Mobile provides the convenience of remotely accessing key functions of Wisenet WAVE from your smart device. Stay informed and take prompt action by viewing and responding to incidents captured by Wisenet cameras, empowering you to effectively manage surveillance operations while on the go.

Wisenet Mobile
Connect. View. Search. Control.

Features

Connect	View	Search	Control
Wifi	Live Video (adaptive)	Keyword	Advanced PTZ / Standard PTZ
Data 4G/LTE	Recorded Video (adaptive)	Calendar	Fisheye Dewarping
NAT Traversal	Layouts	Flex Timeline	2 Way Audio
Data Proxy via Cloud	Available Systems	Motion Search	Push Notifications
Encrypted Connections	Camera Status		
Encrypted Video	Adjustable Resolutions		
	Portrait & Landscape Viewing Modes		

Features	
Remote Connect	Login using local or Wisenet WAVE Sync credentials
Live Thumbnails	Thumbnails refresh in real time
Keyword Search	Search for cameras or layouts by name
Calendar Search	Search by date and time
Motion Search	Search motion events within the entire video or specific region
Advanced PTZ	Point pan, zoom, tilt controls, PTZ presets
Fisheye Dewarping	Dewarp fisheye images
Adaptive Scaling	Hi / Low resolution switching transcoding
Layouts	View thumbnails of System Layouts
Quick System Switch	Quickly switch between multiple Wisenet WAVE systems
Push Notification	Receive customizable push notifications using WAVE VMS rules
Bookmarks	View existing bookmarks from WAVE VMS

Supported Operating Systems

Oreo	8.0 - 8.1	iOS 12	12.0
Pie	9.0	iOS 13	13.0
Android 10	10.0	iOS 14	14.0
Android 11	11.0	iOS 15	
Android 12		iPadOS 15	

Specifications

Supported Media Playback	
Streams	Codecs: H.265, H.264, HLS

For more information visit us at

HanwhaVisionAmerica.com