

wisenet WAVE



Video Management System

Intuitive and easy to use

- An intuitive 'drag & drop' tool makes it extremely easy for operators to set up a display of live and recorded images on a single screen or video wall, with customizable layouts and sizes.
- Zoom windows which, with just simple clicks of a mouse, enables operators to zoom in to see close up detail of any suspicious activity.
- Motion detection and video analytics support can be configured to generate alerts when user defined incidents occur.
- A wide range of smart, keyword, calendar and preview search options facilitate rapid retrieval of recorded video.

Wisenet WAVE targets the needs of projects in the mid-market with an emphasis on simplified user experience.

SUNAPI 2.0 INTEGRATION

Wisenet WAVE is integrated with the latest SUNAPI 2.0 for seamless interaction with WISENET cameras and recorders.

Full SUNAPI 2.0 driver has been rigorously tested with Wisenet P, X, and Q series and supports:

- Video/Audio Streaming
- Event Advanced analytics, MD, Alarm

PTZ

• Device configurations

Hanwha Techwin specific features Deep camera integrations; and NVR monitoring, search & playback:

- H.265
- WiseStream
- All triggering events including sound classification and loitering
- · Simple focus setting
- Multi directional camera support
- · Hallway view
- Camera profile/Image configuration
- PTZ preset Sync



Simple. Reliable. Customizable.

Wisenet WAVE VMS features a very unique adaptive scaling technology which dynamically switches between the high resolution and low resolution images depending on the CPU usage of the client PC. It is an endlessly customizable IP Video Management platform that gives users the ability to create tailored networked video solutions for any type of project, for use by anyone, on any device.



An Operating System to Suit Your needs

Wisenet WAVE has applications for all major operating systems so our 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 Techwin Support)



WAVE Sync

A cloud-based service that enables simple, centralized remote access and insight into any Wisenet WAVE system.



Desktop

A rich media player designed to view and manage a single Wisenet WAVE system from a desktop or laptop PC.



Mobile

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



Server

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

Supported Browsers		Desktop OS Support		Mobile OS Support		Server OS Support	
9	Google Chrome		Microsoft Windows	I	Google Anroid		Microsoft Windows
U	Mozilla Firefox	·Q	Ubuntu Linux	Ć	Apple iOS	·Q	Ubuntu Linux
0	Opera / Opera Neon	Ć	Apple macOS				
e	Micosoft Edge						
(Apple Safari						



Cloud

Wisenet WAVE Sync Simplifies Everything

A cloud-based service which can be remotely accessed by an unlimited number of authorized users from anywhere in the world.

Setup in Seconds



Step 1: Create Wisenet WAVE Sync Account

Step 2: Link your System to Wisenet WAVE Sync

Step 3: Connect, View, and Manage from anywhere

Connect. View. Manage. Scale.

Wisenet WAVE Sync is a public cloud application hosted on Amazon AWS that enables simple remote connectivity, streaming and management of one or an unlimited number of Wisenet WAVE Systems.

Supported Operating Systems:









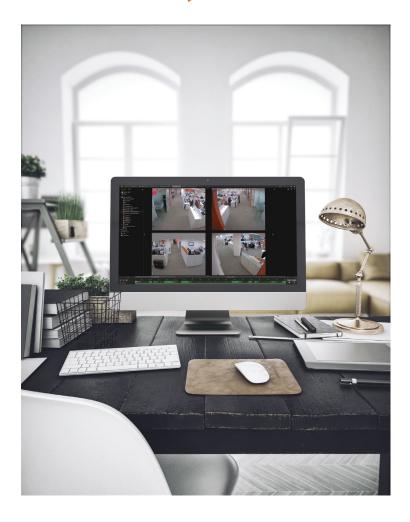
Microsoft Edge



View	Manage	Scalability / Integration
Live Video (adaptive)	System Settings	Unlimited # of Systems
Recorded Video (adaptive)	User Permissions	Unlimited # of Users
Camera Details	Cloud Connections	Unlimited # of Devices
Keyword Search	Email Notifications	Cloud API
Calendar Search		
Flex Timeline		



Wisenet WAVE Sync Browser & Devices Interface



Cloud Systems

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 Roles to quickly assign access to multiple Wisenet WAVE Sync

connected Systems.

How it 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).

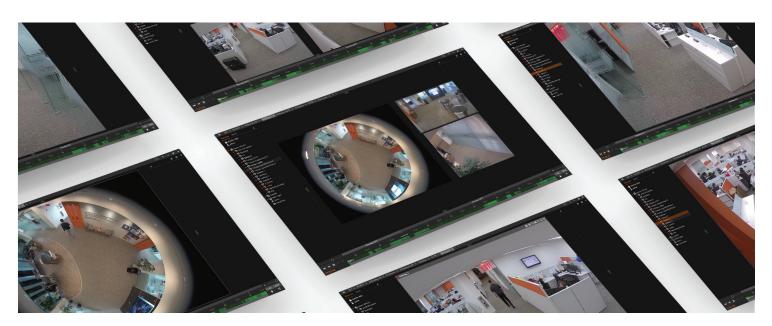
Wisenet WAVE Sync Features			
Connectivity	Nat Traversal: Connect Directly To Proxied Wisenet WAVE Servers		
	Cloud Data Proxy: Connect Via AWS Cloud Proxy Service		
Interface Tabs	Systems: View Connected System Tiles		
	Settings: View Users/ Rename System/ Disconnect System		
	View: Use Wisenet WAVE Sync Client To View Live Or Recorded Video		
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		

Desktop

The Ultimate Flexibility

Wisenet WAVE offers a wide range of options to allow users to choose how and where to manage their video surveillance systems with minimal hardware requirements.

Wisenet WAVE is offered as software which can be installed onto a user's desktop running Windows, Linux or Apple devices.



One App, Many Features

Wisenet WAVE Desktop combines performance, ease-of-use, and a robust reliability into a single cross-platform lightweight app capable of running on everything from Atom based tablets to Xeon based servers.

Supported Operating Systems:







Usability	Media	Configuration	Search
Drag & Drop Everything	IP Cameras / Encoders / DVRs	Events & Rules Engine	Smart 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



Desktop Application



Supported Operating Systems

Windows 7 Windows 8 Windows 8.1 Windows 10

Windows Server 2008
Windows Server 2008 R2
Windows Server 2012
Windows Server 2013 R3

Windows Server 2012 R2 Windows 10 Enterprise

Ubuntu Linux 14.04 LTS Ubuntu Linux 16.04 LTS

> OS X El Capitan 10.11 macOS Sierra 10.12 macOS High Sierra 10.13

Live Streams	Codecs: H.265 H.264 MIPEG			
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	View, configure, and manage any Wisenet WAVE system			
Videowall	Put Desktop into VideoWall mode to control remotely			
Showreel	Fully customizable timed viewing tour of any GRID media			
Maximum # Of Grid Items				
64 Bit OS	64 Items (e.g. 64 live streams)			
32 Bit OS	24 Items (e.g. 24 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/ OpenGL2.1 support Networking: 1GB NIC			
Performance Specs	Hard Drive: Performance SSD RAM: 16 GB RAM CPU: Intel Core i5 Graphics: NVIDIA GeForce GTX 1050 (OpenGL2.1 support is required) Networking: 10 GB NIC			



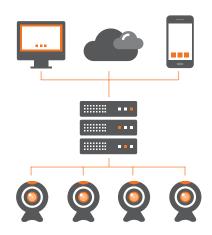
Server

Lightweight. Powerful. Server Hive.

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

Wisenet WAVE is available as a downloadable software application from the Hanwha Techwin website which enables the installers to easily and effortlessly install and configure.

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. The application also provides an audit trail, real-time health monitoring and camera failover support, as well as reports on server health and storage status.



Server Hive

Connect to any Server w/ any Client

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

Discover. Manage. View. Integrate.

The Wisenet WAVE server application is a lightweight, powerful media server responsible for discovering, connecting to, and managing Wisenet WAVE system devices and data.

Supported Operating Systems:





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
3rd Party DVR / NVRs	Events & Rules Engine	Log Files	Storage SDK
Servers / Systems	Failover	Audit Trail	Video Source SDK
SAMBA NAS	Transcoding	Storage Status	Any Device or System



Server Application



Supported Operating Systems



Windows 7 Windows 8 Windows 8.1 Windows 10

Windows Server 2008 Windows Server 2008 R2 Windows Server 2012 Windows Server 2012 R2 Windows 10 Enterprise



Ubuntu Linux 14.04 LTS Ubuntu Linux 16.04 LTS

Supported Media Streaming				
Live Streams	Video: H.265 H.264 MJPEG			
	Audio: AAC PCI	M (Mu-Law, A-lav	v) g726 MP3	
Live Streams (Available to pull from Server to 3rd Party)	Video: H.265 H.	264 MJPEG Webl	M	
· ·	Audio: AAC PCI	M (Mu-Law, A-lav	v) g726 MP3	
	Protocols: RTSP	MJPEG WebM H	ILS	
Other				
Automatic Camera Failover	~1 Min. Config	urable.		
Transcoding	Supported (For	Web Client, Mok	oile, Api)	
Database	SQLITE + Propr	ietary Archive Inc	dex	
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			
NAS	SAMBA (Authenticated, Unauthenticated)			
Scalability				
# Of Clients Per Server:	50			
# Of Clients Per System:	Unlimited			
# Of Streams Per Server:	128			
# Of Servers In a Server Hite	50 (50 is a recommended maximum. Contact support for more info).			
Hardware Recommendations				
	Streams	RAM	NIC	CPU*
	Up to 16	2 GB	1 GB	Dual Core Atom
Recommended based on # of streams	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 cor	rect at time of pr	int.	

Mobile

Smart Phone. Smart Video.

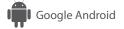
A mobile app provides the opportunity to remotely access the key functions of Wisenet WAVE from a smart device to enable 'on-the-road' users to view and respond to any incidents captured by Wisenet cameras.



Connect. View. Search. Control.

Wisenet WAVE Mobile, with a custom developed media player, is a low-latency, user-friendly mobile application for iOS and Android devices that allows users to connect to, view, search, and control IP cameras over Wifi or data networks.

Supported Operating Systems:





Connect	View	Search	Control
Wifi	Live Video (adaptive)	Keyword	Advanced PTZ / Standard PTZ
Data 4G/LTE	Recorded Video (adaptive)	Calendar	Fisheye Dewarping
	Layouts	Flex Timeline	2 Way Audio
	Available Systems		



Mobile



Supported Operating Systems

	Jelly Bean Kit-Kat Lollipop Marshmallow Nougat Oreo	4.1 - 4.3.1 4.4 - 4.4.4 5.0 - 5.1.1 6.0 - 6.0.1 7.0 - 7.1.2 8.0
	iOS 5 iOS 6	5.0 - 5.1.1 6.0 - 6.1.6
	iOS 7	7.0 - 7.1.2
~	iOS 8	8.0 - 8.4.2
	iOS 9	9.0 - 9.3.5
	iOS 10	10.0 - 10.3.3
	iOS 11	11.0





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



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