

VAST Security Station

Manage video in an effortless intelligence way

Product Description

VAST Security Station (VSS) is a video management software with an intuitive, user-friendly interface designed to help customers efficiently set up and manage projects. Its centralized management supports easy scalability, from single shops to multi-site deployments, while seamlessly integrating with VIVOTEK's wide range of network devices, such as cameras, NVRs, PoEs, and IP audio systems, to meet various surveillance needs. Additionally, VSS incorporates VIVOTEK's exclusive Vision Object Analytics, offering rapid, precise object tracking and search capabilities. With VSS, managing your surveillance system becomes effortlessly intelligent.

Diverse Feature Support



Deep Search



Alarm/
Notification

TCP

TCP message



Data Magnet



Digital
Watermark



Video Export
Encryption



Video Recording
Encryption



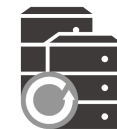
GIS/GPS



E-map



Matrix

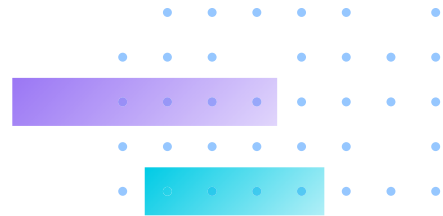


CMS/Substation
Failover

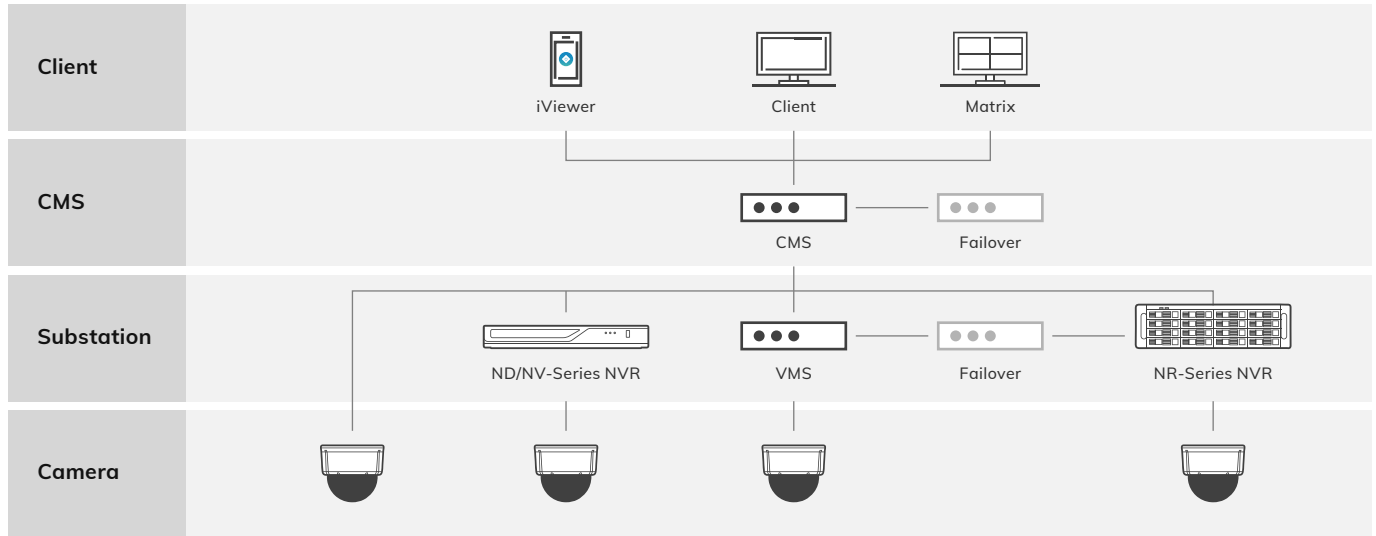


Dashboard





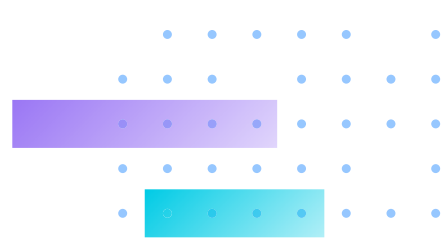
VSS Architecture Overview



Specification

Product Edition	VSS Lite	VSS Std	VSS Pro
	VSS Lite	VSS Standard	VSS Professional
Product Overview	Free entry-level VMS for basic surveillance needs	Cost-effective solution for small and mid-size business	Designed for mid-size to large-scale projects requiring central management and 24/7 operations
Software Version	1.3		
System			
Deployment			
Maximum Number of Cameras Per Server ¹	32	256	320
Maximum Number of Clients Per Server	200 ²		
Maximum Number of Simultaneous Video Streaming Output Per Server	2,048 ³		
Maximum Number of Substations Per System	0	64 ⁴ (ND/NV series NVR)	700 (ND/NV series NVR, VSS Pro NR series NVR, VSS Professional Station)
Maximum Number of Cameras Per System	32	256	22,400 ⁵
Licensing⁶			
Complimentary Camera License	32 (VIVOTEK cameras only)	8	0
Platform			
Server	Windows	Windows 11, 10 (64-bit); Windows Server 2022, 2019, 2016, 2012 (Server Core installation type is not supported)	
	Virtual Machine	-	-
Client	Desktop Application	Windows 11, 10 (64-bit); Windows Server 2022, 2019, 2016, 2012 (Server Core installation type is not supported); macOS 13, 14 ⁷	
	Web Browser	Google Chrome 128.0.6613.114 or later; Microsoft Edge 128.0.2739.54 or later	
Mobile APP	iViewer (iOS/Android)		

1. Please refer to the system requirements when designing your surveillance deployments.
 2. The maximum number of clients per server is based on each client being able to connect to 1 live view of camera. However, this number may vary depending on system workload and network bandwidth.
 3. The number of video streaming outputs a server can handle at the same time depends on the system workload and network bandwidth.
 4. The number of substations per system is limited by the maximum number of cameras per system.
 5. The maximum number of cameras per system is obtained by 320 cameras per server X 70 substations per system or 32 cameras per server X 700 substations per system.
 6. Please refer to the "License Overview" section for further information.
 7. The limitations of macOS client: (1) Only supports 3GP as exported video format 3GP; (2) AD login cannot be set up in macOS client; (3) Only supports the joystick AJ-001; (4) Only supports one-way audio; (5) Does not support standalone player; (6) Does not support third-party fisheye dewarping.

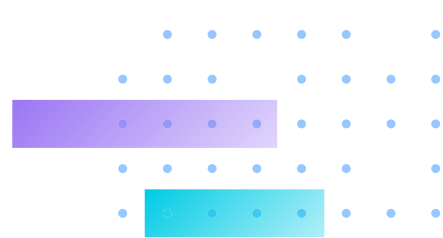


Specification

Language			
Language	Arabic, Czech, English, French, German, Italian, Japanese, Korean, Portuguese, Persian, Polish, Russian, Simplified Chinese, Spanish, Thai, Traditional Chinese, Turkish, Vietnamese		
General			
Video			
Video Format	MJPEG, MPEG4, H.264, H.265		
Video Resolution	Up to 12 Megapixels		
Audio			
Audio Format	G.711, G.726, AMR, MPEG-2 AAC-LC		
Audio Capability	Two-way audio		
Key Features			
Live View			
Maximum Number of Display Channels Per Monitor ⁸	64		
Multicasting of Live Streams from Servers to Clients	•		
Display Layout Option	Equal	1x1, 2x2, 3x3, 4x4, 5x5, 6x6, 7x7, 8x8	
	Panorama	1P+6, 2P, 2P+3, 3P	
	Focus	1+12, 1+16, 1+3, 1+5, 1+7, 1+9, 2+8	
	Vertical	1V+6, 2V+2, 2V+3, 3V, 3V+4, 4V, 4V+4, 5V	
Custom Layout	•		
Camera Tour	•		
View Cell Source	Camera streaming, E-map, webpage		
Fisheye Display Mode	1O, 1P, 1R, 1O3R, 4R, 2P, 4R Pro, 1O8R		
3 rd Party Fisheye Dewarping	-	•	•
Multi-Sensor Display Mode	1P, 1R, 1P2R, 1P3R		
Display Watermark	•		
Recording			
Maximum Number of Recording Channels Per Recording Group ⁹	32	256	320
Additional Recording Time for Event Recording	Pre-event recording time: 3 ~ 15 (sec.); Post-event recording time: 10 ~ 60 (sec.)		
Recording Stream Type	Unicast		
Recording Stream	Single		
Recording Mode	Continuous, customized schedule, event		
Activity Adaptive Streaming	•		
Recycle Options	By remaining storage space, by the set number of days		
Recording File Format	3GP		
Video Encryption			
Digital Watermark	•		
Exported Video Encryption	• (AES-256 CTR)		
Recording Encryption	-	-	• (AES-256 CTR)

8. The maximum number of monitors depends on the capability of your system.

9. Please refer to system requirements when designing your surveillance deployments.



Specification

Playback			
Maximum Number of Display Channels Per Monitor ¹⁰		64	
Display Layout Option	Equal	1x1, 2x2, 3x3, 4x4, 5x5, 6x6, 7x7, 8x8	
	Panorama	1P+6, 2P, 2P+3, 3P	
	Focus	1+12, 1+16, 1+3, 1+5, 1+7, 1+9, 2+8	
	Vertical	1V+6, 2V+2, 2V+3, 3V, 3V+4, 4V, 4V+4, 5V	
Custom Layout		•	
Playback Mode		Asynchronous, synchronous	
Playback Control		1/64X ~ 64X speed control, next/previous frame, pause, play, rewind, stop	
Playback Timeline		Event timeline interval display, scale adjustment	
Display Watermark		•	
Search			
Bookmark Search		•	
Calendar Search		•	
Event Search		•	
Thumbnail Search		•	
Log Search		•	
Data Magnet Search		-	•
Alarm Search		-	•
Smart Search		-	•
Deep Search ¹¹	Object Search	-	• (People, vehicle)
	Attribute Search	-	• (People: gender, age, clothing color, accessories; Vehicle: type, color)
	Scene Search	-	• (Line crossing, intrusion, loitering)
	Re-Search ¹²	-	-
	Case Vault	-	• (Search by similar appearance)
Export			
Exported Snapshot Format		JPEG, PNG	
Exported Video Format		3GP	
Exported Video Mask		-	•
VIVOTEK Standalone Player			
Layout		Single, multiple	
Custom Layout		According to playback export layout configuration	
Supported Video Format		3GP, MP4	
Playlist Control		Drag and drop, play and delete selected or all videos	
Playback Mode		Asynchronous, synchronous	
Playback Control		1/64X ~ 64X speed control, next/previous frame, pause, play, rewind, stop	
Playback Timeline		Event timeline interval display, scale adjustment	
Snapshot		JPEG, PNG	
Exported Video Format		3GP	

10. The maximum number of monitors depends on the decoding capability of your system.

11. Please note that (1) The number of cameras a server can search is limited by your system capability; (2) The supported Deep Search features may vary depending on the specifications of camera models and ND/NV series NVRs. Please refer to <https://www.vivotek.com/ai-driven/deep-search-system-requirement>; (3) An object can generate approximately 0.25 MB of data. For mid-to-high activity scenes, such as parking lots, with about 10 objects per minute, the data capacity can take up approximately 150 MB of storage space per hour per camera.

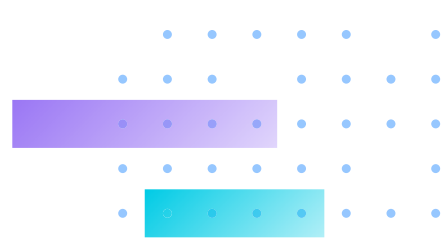
12. Please note that (1) the CPU and disk performance will influence the search speed; (2) a broader search time frame and more selected cameras require a longer search time and may reach a 90-second timeout.

Specification

Alarm Management					
Maximum Alarm Period		-	30 (sec.)	30 (sec.)	
Schedule Type		-	Continuous, schedule	Continuous, schedule	
Alarm Trigger Type	Camera Event	General	-	Audio detection, camera DI/DO, camera disconnected, IR (Infrared), motion detection, PIR (Passive infrared), recording error, SD card life expectancy detection, shock detection, stop recording, tampering detection, temperature, video loss (Video server only)	
		Video Content Analysis	-	Intrusion detection, loitering detection, line crossing detection, unattended object detection, missing object detection, face detection, crowd detection, running detection, parking violation detection, restricted zone detection, smart tracking, zone detection	
		Trend Micro IoT Security	-	Brute force attack, cyberattack, quarantine	
		List Management	-	List management	
	System Event	ND series NVR	-	Storage failure, storage full, network disconnected, fan status, brute force attack, cyberattack, quarantine	
		NV series NVR	-	Storage failure, storage full, network disconnected, abnormal g-sensor motion, speeding, GPS disconnected	
		NR series NVR and VSS Professional Station	-	-	Storage failure, storage full, network disconnected
		Counting Report	-	Number of remaining people ¹³	
External Device Event		-	Data Magnet, I/O box DI/DO, TCP message, virtual trigger		
Alarm Action		-	Add bookmark, go to camera presets, go to e-map, play audio file with network audio device, set DO status, start to record video, send email with snapshot, send HTTP requests (GET/POST method), send live streaming, send mobile notification, sound the alarm		
Alarm Result Display		-	By list, by thumbnail	By list, by thumbnail	
Alarm Search Filter		-	Time, trigger type, status, name, trigger source	Time, trigger type, status, name, trigger source	
Alarm Status		-	New, in progress, false alarm, close	New, in progress, false alarm, close	
Alarm Result Export		-	3GP, CVS	3GP, CVS	
Additional Time for Exported Alarm Clip		-	Pre-triggered: 1 ~ 10 (min.); Post-triggered: 1~60 (min.)	Pre-triggered: 1 ~ 10 (min.); Post-triggered: 1~60 (min.)	
PTZ					
Supported Zoom Type		Digital zoom, optical zoom			
PTZ Control Mode	Pan and Tilt Control	Mouse drag and move, click to move	Mouse drag and move, click to move, joystick	Mouse drag and move, click to move, joystick	
	Zoom Control	Area zoom, button, mouse wheels	Area zoom, button, mouse wheels, joystick	Area zoom, button, mouse wheels, joystick	
PTZ Operation		Home, preset, patrol, auto pan, auto focus, manual focus, focus speed, zoom speed, tracking			
Tracking Mode		Auto tracking, Smart Tracking Advanced			
E-map					
Supported Image Format		-	BMP, GIF, JPG, PNG, SVG	BMP, GIF, JPG, PNG, SVG	
Supported Items		-	Camera, DI/DO (Camera, NVR), regional map	Camera, DI/DO (Camera, NVR), regional map	
Map Control		-	Tilt angle adjustment, zoom in/out	Tilt angle adjustment, zoom in/out	
Map Elements Control		-	Add and remove items (Camera, DI/DO, regional map), click icon for live view/ playback/ PTZ control, FOV direction adjustment, icon/ FOV color, icon/ FOV type	Add and remove items (Camera, DI/DO, regional map), click icon for live view/ playback/ PTZ control, FOV direction adjustment, icon/ FOV color, icon/ FOV type	
Alarm Notification		-	Video prompt	Video prompt	
List Management					
Recognition Category		-	-	Face, license plate	
List Enrollment to Cameras		-	-	•	
Maximum Number of Lists per Server		-	-	100	
Maximum Number of Members per List ¹⁴		-	-	Face: 10,000; License Plate: 20,000	
Supported VIVOTEK Cameras		-	-	FD9387-FR-V2, FD9387-FR-V3, IB9387-LPR-V2 (N) series, IB9387-LPR-V2 (V) series, IB9387-LPR-V3 (N) series, IB9387-LPR-V3 (V) series	

13. This feature requires appropriate configuration on the counting camera and Counting Report.

14. The maximum number of members per list is restricted by the supported VIVOTEK cameras.



Specification

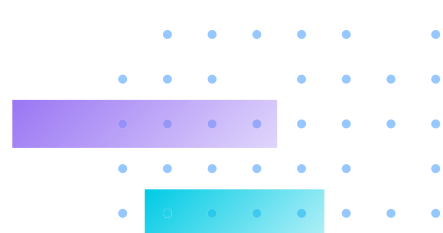
Video Content Analysis				
Counting Report		-	•	•
Backup				
External Network Storage			NAS (SMB/CIFS), iSCSI	
Backup Settings			Select cameras, schedule, upload limit	
Video Wall				
Matrix		-	-	•
User Management				
Maximum Number of User Accounts Per Server			4,096	
User Account Management			Basic user account, Windows Active Directory user account	
User Role	Administrator		•	
	Customizable		•	
	User Pre-defined	-	-	•
User Permission Management			Accessible devices, configuration, operation	
Failover				
Server Type	As a CMS or Single Server	-	-	1 + 1 redundancy
	As a Substation	-	-	N x M redundancy
System Monitoring				
System Monitoring Dashboard	Server Status		CPU, memory, network, storage	
	System Error List		•	
Health Monitoring Service	Device Monitoring and History	-	-	•
	Supported VIVOTEK Devices	-	-	Camera: VIVOTEK 9000 series; PoE: VIVOCAM L2 managed PoE switches (AW-GEV-108A-130, AW-GEV-288A-370); Server ¹⁵ : VIVOTEK ND 9000 series NVR, VSS Pro NR series NVR, VSS Professional Station
Diagnostic Service			•	
Log Management			•	
Maintenance				
VSS Substation Software Remote Upgrade ¹⁶		-	-	•
Web Client				
Live View				
Display Layout Option	Equal		1x1, 2x2, 3x3, 4x4	
	Panorama		1P+3, 1P+6, 2P+3	
	Focus		1+5, 1+7, 1+12	
	Vertical		1V+6, 2V+3, 3V	
Fisheye Display Mode			1O, 1R, 1P	
Control and Display ¹⁷			Audio, digital zoom, image, PTZ, stream	
Integration and Compatibility				
3 rd Party Integration				
Data Magnet	Data Source Type	-	Access control, POS, standard data source, VIVOTEK License Plate Recognition	Access control, POS, standard data source, VIVOTEK License Plate Recognition
	Data Display on View Cell	-	•	•
	Search Result Display	-	By list, by chart	By list, by chart
	Search Result Exported File Format	-	CSV, PNG	CSV, PNG
TCP Message			•	•
Network Audio Solution		-	Trigger recorded announcements; Speak live directly; Broadcast (By group, by schedule)	Trigger recorded announcements; Speak live directly; Broadcast (By group, by schedule)
Transportation Solution		-	-	GIS Maps (Google Map, Open Street Map (OSM)); User-defined maps; Vehicle GPS tracking; Tracks playback

15. This feature is only compatible with VSS version 1.3 or later and ND 9000 series NVRs with firmware version 4.6 or later.

16. This feature requires both your CMS station and VSS substations to be version 1.3 or later.

17. Please refer to the user manual for more information.

Specification

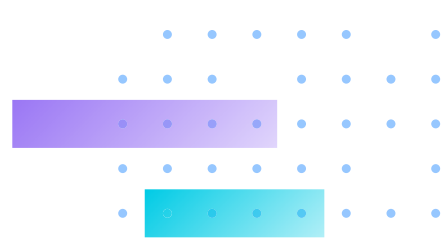


Device Compatibility				
Camera ¹⁸			VIVOTEK 9000 series	
Substation	-		VIVOTEK ND/NV 9000 series NVR	VIVOTEK ND/NV 9000 series NVR, VSS Pro NR series NVR, VSS Professional Station
Joystick	-		VIVOTEK Joystick AJ001, AJ002	VIVOTEK Joystick AJ001, AJ002
Network Audio Device	-		VIVOTEK AU-001, AU-002, AU-003, AU-004	VIVOTEK AU-001, AU-002, AU-003, AU-004
Wiegand Converter	-		VIVOTEK AO-20W	VIVOTEK AO-20W
I/O Box	-		Advantech ADAM-6000 series; Chiyu CYT-133SC; MOXA ioLogik E1210, E1211, E1212, E1214	Advantech ADAM-6000 series; Chiyu CYT-133SC; MOXA ioLogik E1210, E1211, E1212, E1214
Access Control	-		Chiyu CSS-R11 (Expanded by CSS-A11); SOYAL AR-837 series; ZKTeco SpeedFace-V4L	Chiyu CSS-R11 (Expanded by CSS-A11); SOYAL AR-837 series; ZKTeco SpeedFace-V4L
POS	-		ARCH	ARCH
Managed PoE Switch	-		VIVOTEK AW-GEV-104B-130, AW-GEV-264B-370, AW-GEV-108A-130, AW-GEV-288A-370, AW-GEL-065A-060, AW-GEL-105A-110, AW-GEL-205A-260, AW-GEL-285A-380, AW-IHB-1040	VIVOTEK AW-GEV-104B-130, AW-GEV-264B-370, AW-GEV-108A-130, AW-GEV-288A-370, AW-GEL-065A-060, AW-GEL-105A-110, AW-GEL-205A-260, AW-GEL-285A-380, AW-IHB-1040
Camera Integration				
Video Source			VIVOTEK	VIVOTEK, ONVIF, RTSP
			VIVOTEK, ONVIF, RTSP	VIVOTEK, ONVIF, RTSP
VIVOTEK Camera	Settings	Basic	Camera name, streaming protocol (TCP,UDP,HTTP,HTTPS)	
		Video	Video codec, resolution, maximum framerate, intra frame period, video quality, target bit rate, policy (Frame rate priority, image quality priority), Smart Stream	
		Image	Color mode, mount type (Fisheye lens only), power line frequency, timestamp, video title, video orientation	
ONVIF Camera	Profile		-	Profile S
	Video		-	H.265, H.264, MPEG4, MJPEG
	Audio	Format	-	G.711, G.726, MPEG-2 AAC-LC
		Capability	-	One-way audio
Control		-	PTZ control (Up, down, left, right, zoom in/out)	PTZ control (Up, down, left, right, zoom in/out)
ONVIF Camera	Discovery		-	•
	Event		-	Motion, camera DI/DO, video lost (Video server only)
NVR Integration				
Add NVR	Auto Scan		-	•
	Manual		-	•
	From VIVOCLOUD		-	•
Camera Settings ¹⁹		-	•	•
Managed PoE Switch Integration				
Add Managed PoE Switch	Manual		-	•
Web Configuration ²⁰		-	•	•

18. For supported camera models, please refer to https://www.vivotek.com/device_pack#supported_models.

19. This feature is only compatible with ND 9000 series NVRs with firmware version 4.3 or later.

20. The web configuration interface may be different across supported models.



License Overview

Single Server			
System Architecture		VSS Standard	VSS Professional
Cameras under Single VSS Server	≤ 8 CH	Free-of-charge	VSS Pro Camera License
	> 8 CH*	VSS Std Camera License	
Multi-Server			
System Architecture		VSS Standard	VSS Professional
Cameras under CMS Server	≤ 8 CH	Free-of-charge	VSS Pro Camera License
	> 8 CH*	VSS Std Camera License	
Camera under ND/NV Series Substations	≤ 192 CH	Free-of-charge	VSS Embedded NVR Camera License (Requires on CMS server)
	> 192 CH*	VSS Embedded NVR Camera License (Requires on CMS server)	
Cameras under VSS Substations	≥ 1 CH*	Not supported**	VSS Pro Camera License (Requires on each substation)

* The limitations on the maximum camera channels per server and per system vary among different editions. Please refer to the system requirements when designing your surveillance deployments.

**Please upgrade VSS Standard to VSS Professional by purchasing VSS Std-to-Pro upgrade licenses.

System Requirements

VSS VMS Server (Recording Only)				
Operating System	Windows 11, 10 (64-bit) Windows Server 2022, 2019, 2016, 2012 (Server Core installation type is not supported)			
Server	Up to 64-CH	Up to 128-CH	Up to 256-CH	Up to 320-CH
CPU	8th Generation Intel® Core™ i3 Processors desktop version (i3-8100) or above*		8th Generation Intel® Core™ i7 Processors desktop version (i7-8700) or above*	
RAM	8 GB or above		16 GB or above**	
Total Storage Throughput***	288 Mbps	576 Mbps	1152 Mbps	1440 Mbps
Network Interface****	Ethernet, 1 Gbps or above		Ethernet, 2.5 Gbps or above	

VSS CMS Server (Central Management Only)	
Operating System	Windows 11, 10 (64-bit) Windows Server 2022, 2019, 2016, 2012 (Server Core installation type is not supported)
CPU	8th Generation Intel® Core™ i7 Processors desktop version (i7-8700) or above*
RAM	16 GB or above**
Network Interface	Ethernet, 2.5 Gbps or above****

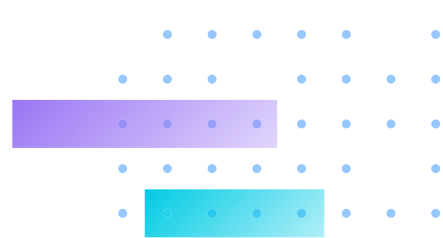
* It is recommended to keep the CPU usage below 80% in normal operating conditions to prevent excessive system load and potential abnormalities in certain situations.

** Please use a dual-channel memory configuration.

*** The total storage throughput refers to 4KB random write throughput. The combined maximum bitrate of cameras cannot exceed the total storage throughput.

**** Please consider the throughput of viewing, recording, and server network bandwidth when designing your surveillance deployments.

[Note] The camera settings in the above table are tested by H.264, 1080P, CBR, and 4 Mbps for each channel; the actual situation depends on the users' system status.



System Requirements

VSS Client & Matrix (Display Only)				
Operating System		Windows 11, 10 (64-bit) Windows Server 2022, 2019, 2016, 2012 (Server Core installation type is not supported)* macOS 13, 14		
CPU		8th Generation Intel® Core™ i3 Processors desktop version (i3-8100) or above	8th Generation Intel® Core™ i5 Processors desktop version (i5-8500) or above	8th Generation Intel® Core™ i7 Processors desktop version (i7-8700) or above
Maximum Display Channels per Client/Matrix	H.264, 720P, 2Mbps for each channel**	8-CH	16-CH	32-CH
	H.264, 1080P, 4Mbps for each channel***	6-CH	10-CH	18-CH
	H.265, 1080P, 4Mbps for each channel	3-CH	5-CH	9-CH
RAM****		8GB or above	8GB or above	16GB or above
Graphics Card*****		Support Direct3D Acceleration with 1GB Video RAM		
Network Interface		Ethernet, 1Gbps or above		

VSS Web Client		
Operating System		Windows 11, 10 (64-bit) Windows Server 2022, 2019, 2016, 2012 (Server Core installation type is not supported)* macOS 13, 14
Supported Browsers		Google Chrome 128.0.6613.114 or later Microsoft Edge 128.0.2739.54 or later
CPU		8th Generation Intel® Core™ i7 Processors desktop version (i7-8700) or above
Maximum Display Channels per Client	H.264, 720P, 2Mbps for each channel**	16-CH
	H.264, 1080P, 4Mbps for each channel***	12-CH
	H.265, 1080P, 4Mbps for each channel	9-CH
RAM****		16GB or above
Graphic Card*****		Support Direct3D Acceleration with 1GB Video RAM
Network Interface		Ethernet, 1Gbps or above

*Independent graphics card is necessary when using Windows Server OS.

** Display requirements of 3MP fisheye camera equal to 720P camera.

*** Display requirements of 5MP fisheye camera equal to 1080P camera.

**** Please use a dual-channel memory configuration.

***** Please update to the latest GPU driver.

[Note]

- Virtual machines may experience a slight decrease in performance compared to real hardware. It is recommended to use virtual machines with specifications equal to or better than the corresponding physical hardware when installing VSS server or client.
- If you plan to install both VSS Server & Client on the same PC, please consider the combined loading when evaluating system requirements.