

VAST Security Station User Manual

Revision Number: v1.4

Software Version: v1.2



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Revision History

Rev. 1.0:

* Initial release.

Rev. 1.1:

* Release for software version 1.1.

Rev. 1.2:

* Update content for correction.

Rev. 1.3:

* Release for software version 1.2.

Rev. 1.4:

* Update content for function improvements

Introducing VSS

VIVOTEK VSS (VAST Security Station) is a professional video / central management software designed to manage all VIVOTEK IP surveillance products with intuitive functions and numerous features. It supports hundreds of cameras and stations in a hierarchical structure system for monitoring, recording, playback, and event trigger management with ease of use and efficient control.

VSS integrates VIVOTEK network cameras to provide diverse solutions and applications, with the cameras for uninterrupted video recording, Smart Search II, Smart VCA, and Cybersecurity management solutions. VSS performs remote management with a full range of the server & client structure and constitutes a robust system for various applications, such as stores, banking, and public space.

Key Features

- Deep Search with attributes, scenes, and Re-search functions
- Smart Search II Plus: Dynamic Forensic Search
 - Line Crossing: Detection of crossing a user-defined line and direction
 - Loitering: Detection of Loitering in an area for a configurable stay time.
 - Intrusion: Detection of intrusion into a zone or leaving a zone.
- Smart Tracking: Speed Dome's People Tracking.
- Live Multicast: Reduced network traffic and optimized bandwidth usage.
- CMS Failover: 1+1 redundancy for Central Management server.
- Data Overlay on screen.
- User-defined role for group authorities
- Recording encryption
- Managed PoE Switch integration

- License plate recognition solution and data magnet
- Cybersecurity Management Solution
- Smart VCA: AI Powered Video Analytics
- System Overview dashboard
- Multi-sensor display modes
- Evidence Lock: Automatically Bookmark Related Recordings When Alarm Triggered.
- Evidence Export: Manually Export Video Recordings or Alarm Clips.
- Matrix for Video Wall Solution
- Automatic Problem Feedback Mechanism
- Multiple Fisheye Dewarp Modes

Installing VSS

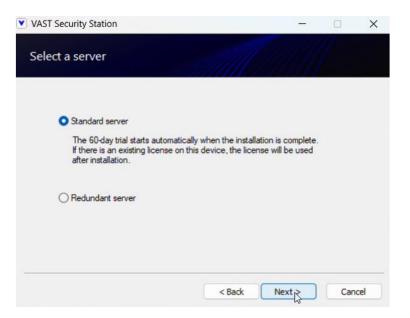
- 1. Run the vss_setup_version_(x64).exe on your computer.
- 2. Read the license agreement carefully and click "I agree" to initiate the installation process.

	Read the following license agreement carefully
	End-User License Agreement
VSS	Effective September 30, 2023
v1.1.0.2316	PLEASE READ CAREFULLY: If you are a VIVOTEK Dealers, system integrators or are otherwise installing this Product on behalf of a third party, you shall ensure that you have their acceptance of this End-user License Agreement.
VIVOTEK	This End-User License Agreement ("EULA") is a legal agreement between VIVOTEK Inc. ("VIVOTEK") as licensor, and you, as licensee, for the VIVOTEK software that accompanies this

3. Select the programs you want to install, then click "Next" to continue. Refer to the "Installation Option" section for more information on the "Server with OpenVPN" option.

Select the programs you want	to install		
elect the programs you want			
Server			
O Server only			
Server with OpenVPN			
Client			
Space required: 1260 MB			
	< Back	Next >	Cancel

4. Select the server type you want to install, then click "Next" to continue. Your first installation of a standard server includes a 60-day trial of the VSS Pro edition, and you will need to purchase the official software licenses for continued use after the trial expires.



5. Create an administrator account.

_				
Server user name:	admin			
Server password:	1	I	1	
Confirm password:				
			·	

6. Set up the name and the default storage path for recording and database.

Station name:	VMS_Station	
Station listen port:	3454	
RTSP port:	4543	\$
HTTPS port:	3443	
Default recording path:	C: Recordings	
Default database path:	C:\Database	

7. Choose whether to enable VSS to utilize and store person attributes and full-body/face images for improved people search. If you prefer to exclude face snapshots, uncheck the "Utilize and store face snapshots" checkbox. This setting can also be modified on the VSS client setting page after installation.

V	AST Security Station		-		×
Se	et Up Deep Search				
	Enabling Deep Search indicates that you h and allows the utilization and storage of bot improved people search. You can choose t concerns. Please visit the following URL for more infor https://www.vivotek.com/privacy	h full-body and for o exclude face s	ace snapshot	ts for	
	Enable Deep Search				
	 Utilize and store face snapshots Disable Deep Search 				
		< Back	Next >	Can	cel

8. Specify a location to install the software, then click "Install".

VAST Security Station	-		×
Select a folder to install			
Installation folder			
C:\Program Files (x86)\VIVOTEK Inc\VAST	Browse		
Space required: 1260 MB			
Space available: 90 GB			
< Back	Install	Can	cel

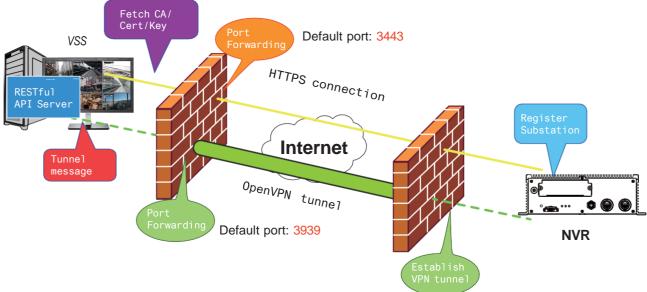
9. Wait for the installation process to complete, then click "Close" to exit the installation process.



Installation Option

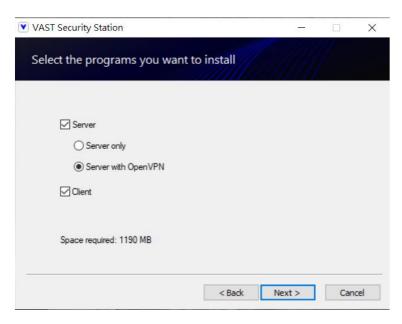
NAT-traversal with OpenVPN

A remote connection between a VSS server and an NVR with 3G/4G/LTE network can be made through an OpenVPN tunnel. The figure below shows the methodology comprising HMAC authentication and TLS encryption over an encrypted UDP connection.



Sample installation steps are shown below:

Step 1: Install VSS by selecting the Server with OpenVPN option.



Step 2: Enable the public IP of the VSS Server.

For the NVR to establish an OpenVPN connection with the VSS Server, the user must activate the public IP of that server. (Note that the specific steps depend on the user's network environment and relevant IT policies.)

After activating the Public IP, ensure the accessibility of the HTTPS port and OpenVPN port. (Note that the VSS OpenVPN port by default is 3939, so the user must set up port forwarding with UDP.)

If the default HTTPS port (3443) is unavailable, the user must modify the corresponding port number under VSS Settings > Device > Stations. If the default port for OpenVPN (3939) is not available, the user needs to modify the configuration file of OpenVPN (located in C:\Program Files (x86)\VIVOTEK Inc\VAST\Server\OpenVPN\config\server\server.ovpn).

You can directly edit the port number in this text file (file content is shown below):

port 3939 proto udp dev tun lca ca.crt cert server.crt key server.key dh dh.pem server 10.6.0.0 255.255.0.0 topology subnet client-to-client client-config-dir "C:\\Program Files (x86)\\VIVOTEK Inc\\VAST\\Server\\OpenVPN\\ccd" keepalive 10 120 cipher AES-256-CBC max-clients 50000 persist-key persist-tun status openvpn-status.log log-append openvpn.log lverb 3 mute 20 sndbuf 262144 rcvbuf 262144 ltls-server compress lzo

Step 3: Configure the NVR OpenVPN connection.

Once you have obtained the VSS Server public IP, configure the NVR settings under Network > Service > CMS. Then, enter the VSS server public IP/credentials/API service port (HTTPS). (Note that if the HTTPS port on the VSS end is not 3443, you must modify the corresponding port number.)

After configuring the settings for VSS and NVR, the OpenVPN connection will be established. Once the connection is established, this NVR will be automatically added to the VSS server. (Note that the NVR and VSS server should have a similar time setting when exchanging certificate information. Otherwise, the mutual handshake authentication process may fail.)

Settin	igs								
6.1	Overview								
			Servic	e port					
□₽	Camera		HTTP		80]		
			HTTPS		443]		
≞	Alarm		RTSP		8554]		
	System		VMS 8	2 Ann					
				ow access					
ප	User						[]		
			Poi	rt VMS	& App		3454		
	Storage			VMS (sam	e as HTTPS)		443		
								\$	
\bigoplus	Network	IP	VN	/IS Setu	p password for VMS			1 I	
				Conf	irm password				
	Applications	DDNS							
(i)	Information	Service		~	VMS remote connection	'n			
					IP				
		HTTPS certificate			API service port	3443			
					Username			VMS	↓ NVR
					(administrator)				
					Account password				
								Apply	Cancel

Log In

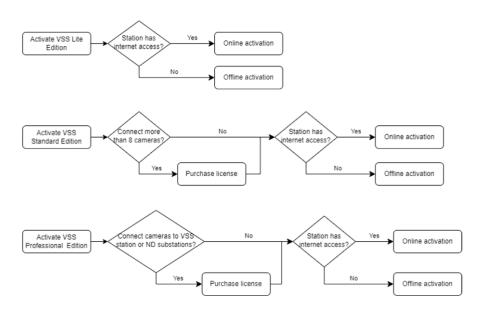
To log in:

- 1. Enter the server's IP address and TCP port number (3443 as the default). If logging in from the server itself, you can select the Local station checkbox.
- 2. Enter the credentials for login. The credentials were created during the installation.
- You can use an existing AD account to log in. Please refer to Settings > User
 Management > Add a New User Account Windows AD Account for configuration.
- 4. Auto login: After you enter the credentials for the first time, the server will not prompt for credentials the next time you start the VSS software.



VSS Software License

To activate the software, refer to the flow chart below:



After VSS is installed, a 60-day trial version will be started automatically.

Users must select one VSS edition and activate the license online or offline before the trial expires. Otherwise, the camera live view, playback, and recording services will stop after a 60-day trial. Users can use the edition selector on the VSS website to select the suitable VSS edition and use the license calculator on the download page to calculate the required license.

Online activation

If the VSS station has internet access, activate the license using the online activation method. The license request file of the VSS station (.req file) will be sent to the licensing server automatically via the internet. The licensed file (.lic file) will be received from the licensing server if the activation process is successful.

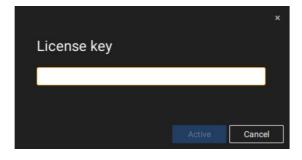
Online activation is recommended over offline activation. However, if online activation fails or internet access is unavailable, see Offline Activation in the next section below. Steps:

The edition menu will show if you must purchase licenses to activate each edition based on your current VSS deployment.

If the purchased license is not required, click on the edition, and the activation process with the licensing server will begin.

License	×
Select 1 edition	
VSS Lite Edition License is not required.	
VSS Std Edition License is not required.	
VSS Pro Edition Required VSS Pro Camera Licenses : 3 CH.	
Try offline activation	

If the purchased license is required, a license key window will pop up after you select the edition. Type in the license key you purchased and acquired from your distributor or VIVOTEK local sales and click Activate, then the activation process with the licensing server will begin.



If you select **Activate with license key**, select the station where the license key will apply to. Enter the license key.

V destre				- Distantion (- 305 - 単二本 - 50 - 50	
	Activate with license					
	Select stations and enter lic	cense key to activate license				
	Status	Station name	Purchased licenses	Licenses key		
		VMS_Station	256 (Trial)			
		-Substation_01	0	substation-01-4-12s3ds1;		
					Activate Cancel	

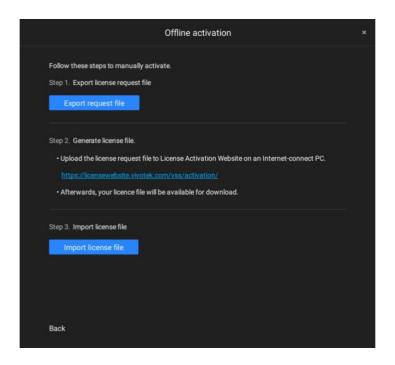
When successfully activated, the associated check circles will turn green. Click the Close button on the upper right of the screen.

M	4	À			Televisi	(3) = 60	H. A. O. O
							×
	Activate comr	limentary license					
		activate complimentary	license.				
	Status		Station name	Purchased licens	es		_
		0	VMS_Station	256 (Tri	al)		
		0	-Substation_01		0		
arean -							
						Activ	ate Cancel

If you fail, the status bar will turn yellow with an alarm icon, and the possible reason will be listed.

V. and	10 (A)				137	用 長 務 所 一 5
Learner Learner Mill Mill Mill Minner Minner Minner Minner	Activate complimentary license Select stations to activate complimentar	y license.				×
SSITE	Status	Station name		Purchased licenses		
144		VMS_Station		256 (Trial)		
Following .	Network re	-Substation_01		0		
1						
Infantity management						
Printersk and burgs						
						Activate Cancel
	Total (J.J.	AD Noeltse Mikluded)	*	0		

If your VSS station has no Internet connection, Click Try offline activation.



According to the instructions on the screen,

1. Export license request file.

2. Select the station to export the license request, click Export, and select the destination of the request file.

1 license	+ Add	Edition	Station name	Unlicensed
VMS_Station_127.0.0.1.lic	8	Trial	VMS_Station	

The REQ file looks like the following.

→ · ↑ 📙 > Thi	s PC > Desktop > VSS License				~ Ö	, Search VSS License	
Network Pictures 🖈 ^	Name	Date modified	Туре	Size			
	VMS_Station_VSS_Trial_127.0.0.1_0.req	12/30/2022 5:54 PM	REQ File	2 KB			
J Music							
Videos							
VSS License							
 OneDrive 							
This PC							
3D Objects							
E Desktop							
🗎 Documents							
🕹 Downloads							
J Music							
E Pictures							
Videos							
Videos							

3. Find a computer to upload the license request file (.req) to VIVOTEK's license activation portal at https://licensewebsite.vivotek.com/vss/activation/.

4. Follow the instructions on the license activation portal to generate and download the license file (.lic). Upload or copy the file to your VSS station.

5. Return to the offline activation window on your VSS station, select Import license file, click Add to select the license file (.lic), and click Activate.

*	Trial	VMS_Station	

5. On your VSS station, select import license file, click Add to select the license file (.LIC file), and click Activate.

A more	÷ (#	平					1855 II A B	
	Import lic Add licenses	ense , then select stations to import your licenses.					×	
Carles Carles	1 license		+ Add	Status	Station name	Purchased licenses		
HA-	License	_dell-pc_0.lic	8		Substation_01	0	-	
(Delement)	1							
2 Million								
President Architects								
							Activate Cancel	

License Protection Mechanisms

The software license is verified by identifying the unique characteristics of the user's PC. The license file contains data on the VSS station's basic hardware configuration (Motherboard, CPU Processor, Graphics Card, RAM, and Network Card). The software license will become invalid if the user changes any three of these essential hardware components. For VSS Professional running on a Virtual Machine (VM; supporting VMware and Microsoft Hyper-V), the license is tied to the MAC addresses of the VM's network cards and the VM UUID. Any changes to these identifiers or alterations in the number of network cards within the VM will invalidate the license.

NOTES:

• Keep a copy of the license key, license request file(.req), and license file (.lic) for future reference.

• Without sufficient licenses, the camera live view, playback, and recording services will stop in 14 days.

• The VAST1 license, VAST2 license, and dongle license are incompatible and unable to be used as the VSS license.

• An identical software license applies to VIVOTEK and ONVIF cameras. You do not need to activate two different kinds of software licenses.

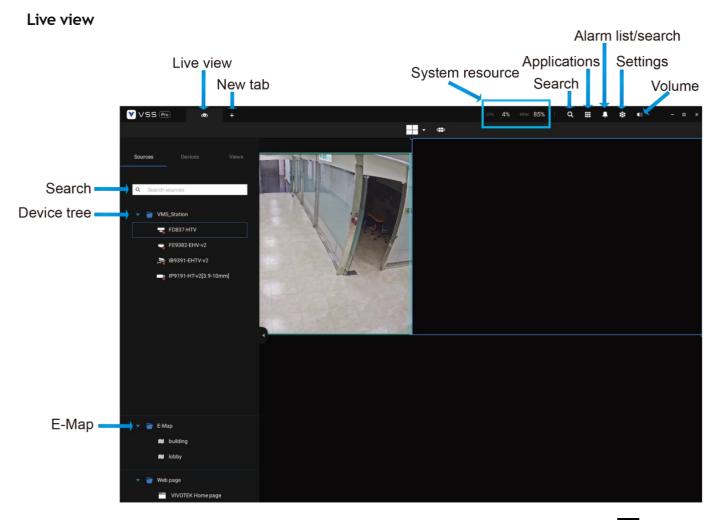
• If the VSS server application is removed and re-installed, the number of licensed channels remains intact.

• Users can upgrade the VSS edition by activating appropriate edition licenses. Downgrading the edition via the license is not supported.

Chapter 1: Basics:

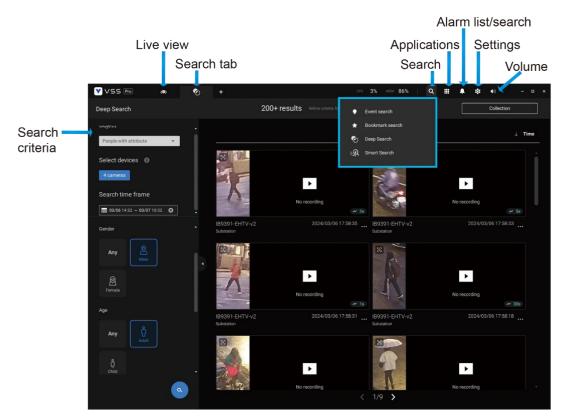
Control and Elements

The basic screen elements of VSS live view, playback, and search panel are shown below:

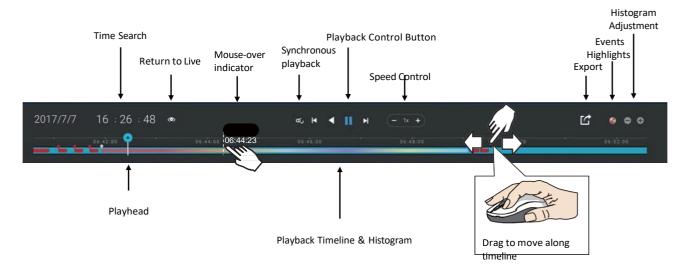


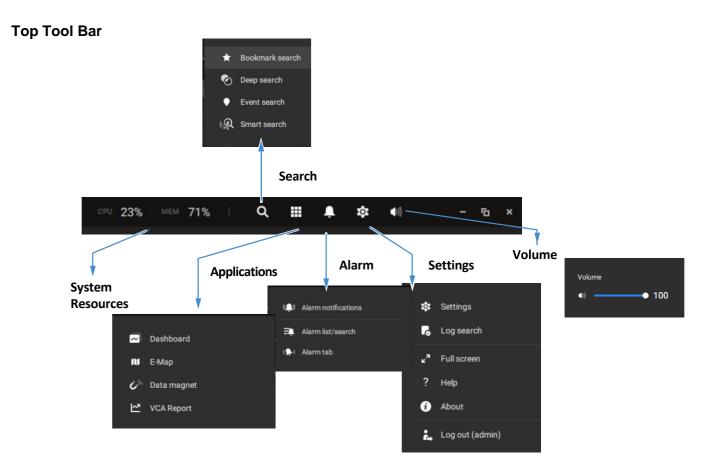
Playback is evoked when a view cell is selected, and you click the Playback button > on the upper right of the view cell.

Search Panel



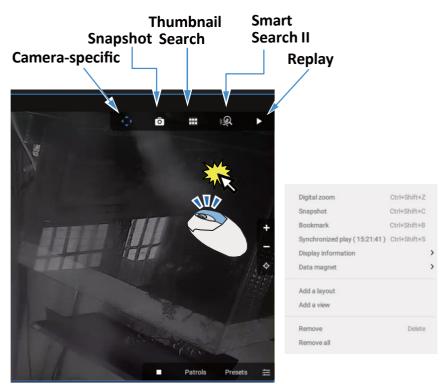
Playback Control





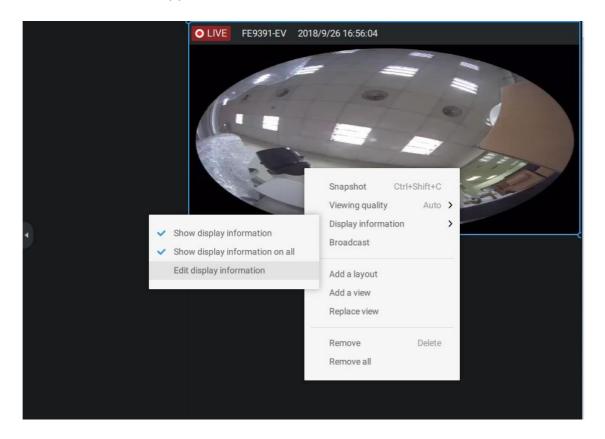
View cell control

Some controls and functions are available when a view cell is selected or via the right-click menus.



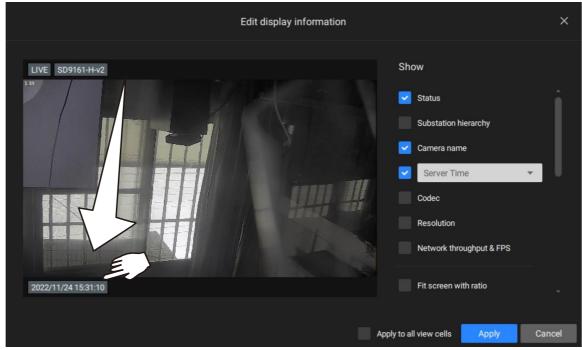
Text overlay

Single-click to select a view cell, right-click, and select Display information. The Edit display information tab will appear.



Select the checkboxes to determine what kind of text overlay will display on view cells. Note that you can place the overlay either on top or at the lower screen. Simply click and drag an overlay item to a preferred location. When done, click the Apply button.

You can apply your current configuration to all view cells by selecting the **Apply to all view cells** checkbox. Note that you can also display the VCA rules and areas on the screen.



Two Way Audio

If your cameras support the Two Way Audio feature and the microphone and audio output to amplified speakers have been connected, you can right-click on the camera to display the Broadcast function. Click on the Microphone icon in the middle to start speaking. Click again to stop the Two Way Audio.

Note that the Broadcast option only appears when you select a camera that supports the Two Way Audio feature. Currently, the VSS software supports 1 to 1 broadcast.



Full Screen

The full-screen function maximizes the display of view cells, concealing all other toolbars or navigation panels. To return to the normal view, press the **ESC** key on the keyboard.

Log Search

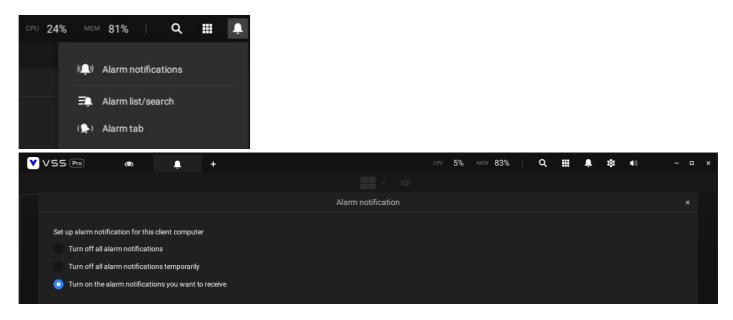
System logs can be found via the toolbar tab. All system events will be listed in the Log search panel. If you have multiple servers or substations, select a server. You can search specific events by the event types (All triggers, camera, system/station, external devices), or by the time of occurrence using the calendar tool.

Use the Export button if to export the system log as an individual log file.

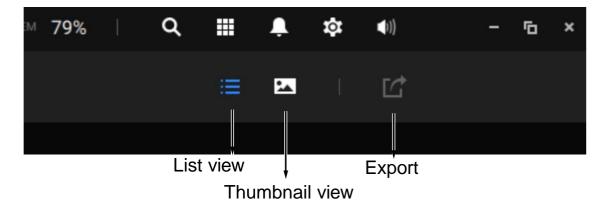
VSS PRO @ @ F +										Trial version UPU 21% HILH 68% C	2 Ⅲ ♣ ⊕ ′	•) – v
Log Search 325 resul	ts											്
		2022/11/24 15:48:08	Operation	Login/out - Login fail	server	User account+admin, Client address=127.0.0.1	Normal	Success				
 Search atations 		2022/11/24 15:47:57	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success				
		2022/11/24 15:47:45	Operation	Login/out - Login fail	server	User account=admin, Client address=127.0.0.1	Normal	Success	Local			
WMS_Station		2022/11/24 15:47:34	Operation	Login/out - Login fail	server	User account+admin, Client address=127.0.0.1	Normal	Success				
		2022/11/24 15:47:23	Operation	Login/out - Login fail	server	User account+admin, Client address=127.0.0.1	Normal	Success				
		2022/11/24 15:47:12	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success	Local			
		2022/11/24 15:47:00	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success	Local			
		2022/11/24 15:46:49	Operation	Login/out - Login fail	server	User account=admin, Client address=127.0.0.1	Normal	Success				
		2022/11/24 15:46:38	Operation	Login/out - Login fail	server	User account=admin, Client address=127.0.0.1	Normal	Success	Local			
		2022/11/24 15:46:27	Operation	Login/out - Login fail	server	User account+admin, Client address=127.0.0.1	Normal	Success	Local			
			Operation			User account=admin, Client address=127.0.0.1						
		2022/11/24 15:46:04	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success				
		2022/11/24 15:45:53	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success				
		2022/11/24 15:45:42	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success	Local			
		2022/11/24 15:45:31	Operation	Login/out - Login fail	server	User account=admin, Client address=127.0.0.1	Normal	Success	Local			
		2022/11/24 15:45:19	Operation	Login/out - Login fail	server	User account+admin, Client address=127.0.0.1	Normal	Success				
Select time frame		2022/11/24 15:45:08	Operation	Login/out - Login fail	server	User account=admin, Client address=127.0.0.1	Normal	Success	Local			
East Hour		2022/11/24 15:44:57	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success	Local			
Category		2022/11/24 15:44:46	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success	Local			
Al		2022/11/24 15:44:34	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success	Local			
		2022/11/24 15:44:23	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success	Local			
Log type		2022/11/24 15:44:12	Operation	Login/out - Login fail	server	User account+admin, Client address+127.0.0.1	Normal	Success				
At *		2022/11/24 15:44:10	Event	Camera event - Recor		Recording server could not connect to carnera	Major	Success	Local			
Severity		2022/11/24 15:44:10	Event	Camera event - Recor_		Recording server could not connect to carnera	Major	Success				
All +		2022/11/24 15:44:01	Operation	Login/out - Login fail	server	User account=admin, Client address=127.0.0.1	Normal	Success	Local			
Status		2022/11/24 15:43:50	Operation	Login/out - Login fail	server	User account=admin, Client address=127.0.0.1	Normal	Success	Local			
- Contraction		2022/11/24 15:43:38	Operation	Login/out - Login fail	server	User account=admin, Client address=127.0.0.1	Normal	Success				
Al ·		2022/11/24 15:43:27	Operation	Login/out - Login fail	server	User account=admin, Client address=127.0.0.1	Normal	Success				
		2022/11/24 15:43:16	Operation	Login/out - Login fail	server	User account+admin, Client address=127.0.0.1	Normal	Success				
		2022/11/24 15:43:05	Operation	Login/out - Login fail	server	User account=admin, Client address=127.0.0.1	Normal	Success	Local			
							1/7 >					

Alarm list

The Alarm list is accessed from the top toolbar. The Alarm list provides easy access to all triggered alarms, such as tampering alarms, alarms reported by VCA analytics, external devices connected via a camera's DI pin, etc.



The Alarm list can be displayed in either the List view or Thumbnail view.



Below is an example of a Thumbnail view.



On the Alarm list, you can double-click to select a triggered alarm. A related snapshot and configuration panel will appear. An operator can select the Status menu to change the event management status. The configurable statuses can be:

- 1. New: An event that has not been handled.
- 2. In progress: Select to indicate that the event is being handled, e.g., a security personnel has been sent to verify the cause of the event.
- 3. False alarm: Used to indicate the event has been verified as a false alarm.
- 4. Close: A closed case event will be erased from the event list.

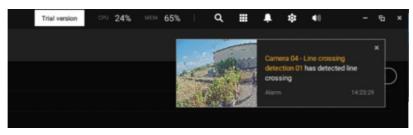
When done with designating event status, click the Acknowledgement button.

V55 (PRO)	കുറ്റത്തി	≉ ا	a, +			Trial version 👓 29% 🕬 84% Q 🔠 🌲 🅸 📢
rm list/search	O UVE					
					Orcup alam	
Alarm	VMS_Station	Camera 04 - Line c	Line crossing detec	2022/11/2516:45_	In progress	
Alarm	VMS_Station	Corners 04 - Line c.,	Line crossing detec	2022/11/2516:43	New	
			Line crossing detec			
						Alarm
						Status New -

The Alarm list also supports Hot keys.

Alarm list window			
Mute the current alarm	Ctrl		m
Designate the selected alarms as false alarms	Ctrl		f
Select all alarms	Ctrl		а
Select one or multiple alarms	Ctrl		left mouse button
Select multiple alarms		Shift	left mouse button
Select different alarms			Up/Down/Left/Right

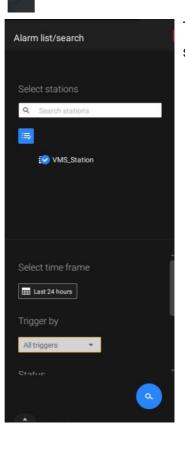
When an alarm is muted, a message will prompt asking for how long the alarm will be muted. Enter a number, and the alarm will disappear from the list temporarily.

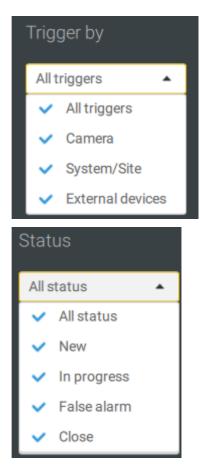


When an alarm is designated as a false alarm, it is immediately removed from the list.

When an alarm is designated as In progress, you can add a comment on the current condition, and click Acknowledge to change its status.

159509-En - Willdow I	Motion detection	2010/12/22 14:00:20	New	
IB9389-EH - Window 1	Motion detection	2018/12/22 14:04:59	New	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
IB9389-EH - Window 1	Motion detection	2018/12/22 13:49:42	New	< 1/2 >
IB9389-EH - Window 1	Motion detection	2018/12/22 13:48:29	New	Alarm
IB9389-EH - Window 1	Motion detection	2018/12/22 13:48:18	New	VMS_Station
IB9389-EH - Window 1	Motion detection	2018/12/22 13:48:09	New	IB9389-EH - Window 1
IB9389-EH - Window 1	Motion detection	2018/12/22 13:48:04	In progress	Status In progress -
IB9389-EH - Window 1	Motion detection	2018/12/22 13:47:37	New	History
IB9389-EH - Window 1	Motion detection	2018/12/22 13:46:58	New	
IB9389-EH - Window 1	Motion detection	2018/12/22 13:45:35	New	\mathcal{O}
IB9389-EH - Window 1	Motion detection	2018/12/22 13:45:10	New	
IB9389-EH - Window 1	Motion detection	2018/12/22 13:45:00	New	
IB9389-EH - Window 1	Motion detection	2018/12/22 13:41:52	New	one sent to verify
IB9389-EH - Window 1	Motion detection	2018/12/22 13:41:21	New	
IB9389-EH - Window 1	Motion detection	2018/12/22 13:41:10	New	Acknowledge





To find alarms of specific types, time of occurrences, and alarm status, click the side tab to reveal the search panel.

You can select the trigger source e.g., when you need to see camera alarms only.

You can check to see alarms of a specific status. For example, you can select to search for the "In progress" alarms only.

Search crite	ria		
Name	*	Ala	0
Name	Ŧ	r –	

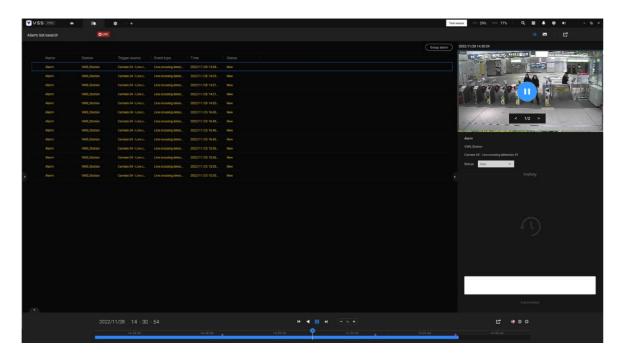
You can enter one or multiple keywords as the search criteria.

For example, if you have an alarm named as "Alarm3sidewalk," use the name as the keyword to search for the related alarms.

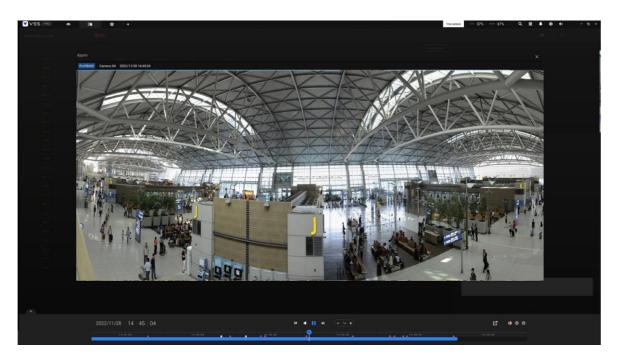
You can use the Export button it to export a full list of all triggered events into a CSV file. The event type, receiving station, triggering device, time of occurrence, and event status will all be listed. You can also export alarm-triggered videos.

You can also add a comment for an event by entering the description in the comment entry field.

To review the alarm-related video, click to select an alarm and double-click to playback. The Playback window will appear on the upper right of the screen.

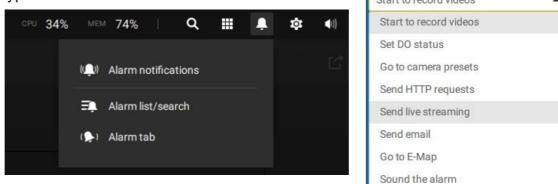


Double-click on the small playback screen again to bring it to the full view. The playback control, timeline, export, and alarm tags will be available on the screen.



Alarm tab

The Alarm tab is an automated streaming window displaying live videos brought by the triggered alarms. If you configure an alarm action as "Send live streaming," the alarm streaming will be displayed in this window. Note that this window does not display other types of alarms.



When a live streaming is sent by an alarm, an orange ringing bell icon will display.



An alarm prompt will also display on the screen.



You can click on the ringing bell icon to open the Alarm tab window. The alarm-trigged streaming will be available on screen.

Hot Keys

Open online document			F1
Close current tab	Ctrl (Win) /		W
	Command (MacOS)		
Open new Live / Playback tab	Ctrl (Win) /		Т
	Command (MacOS)		
Full screen	Ctrl (Win) /	Shift	F
	Command (MacOS)		
Exit full screen	Ctrl (Win) /	Shift	F
	Command (MacOS)		
Exit full screen			Esc
View cell			
Select view cell			Arrow keys
Digital zoom	Ctrl (Win) /	Shift	Z
5	Command (MacOS)		
Snapshot	Ctrl (Win) /	Shift	С
	Command (MacOS)		-
Instant bookmark	Ctrl (Win) /	Shift	В
	Command (MacOS)		
Remove camera from cell			Del
Move to preset position	Ctrl (Win) /		Digits (1,2,3,)
	Command (MacOS)		2.9.00 (1,2,0,)
PTZ model up, down, left, right			Arrow keys
Save current layout as a	Ctrl (Win) /		S
customized layout	Command (MacOS)		C
Undo layout modification	Ctrl (Win) /		Z
	Command (MacOS)		
Redo layout modification	Ctrl (Win) /		Y
incut hybrit mounication	Command (MacOS)		
Timeline			
Sync Playback mode	Ctrl (Win) /	Shift	S
Sync r layback mode	Command (MacOS)	Ormit	0
Pause (Play/Rewind)			Space
Play	Ctrl (Win) /		Arrow right
Гау	Command (MacOS)		
Rewind	Ctrl (Win) /		Arrow left
Rewind	Command (MacOS)		Anowien
Speedup	Ctrl (Win) /		Llp
Speed up	Command (MacOS)		Up
Spood down	· · · · · ·		Down
Speed down	Ctrl (Win) /		
Next frame	Command (MacOS)	Shift	Arrow right
		Shift	Arrow left
Previous frame		Shint	
Reset speed to 1x	Ctrl (Win) /		1 (one)
	Command (MacOS)		
	24		

Smart search II		
- Configuration page		
Delete detection range		Esc

Bookmark search			
Select more bookmarks	Ctrl (Win) / Command (MacOS)		Click
Select more bookmarks		Shift	Click
Back to bookmark page			Esc
Next bookmark			Arrow right
Previous bookmark			Arrow left
Thumbnail search			
Select thumbnail			Arrow keys
Play a selected thumbnail			Enter
Back to Thumbnail page			Esc
Next Thumbnail			Arrow right
Previous Thumbnail			Arrow left
E-map Setup			
- Google map			
Remove selected GPS			Del
DI/DO Device Settings			
Remove selected external I/O device			Del
SMTP Settings			
Remove selected SMTP			Del
server			
Camera Management			
Rename selected camera			F2
Rename selected folder			F2
Remove selected camera from system			Del
Stations Management			
Rename selected station			F2
Remove selected station from			Del
system			
Users Settings			
Remove selected user			Del
Schedule Settings			
Remove scheduled time frame			Del

Data Magnet			
Move selected row			Up / Down
Show detail of selected row			Enter
View management			
Rename selected view			F2
Delete selected view			Del
Alarm management			
Delete selected alarm			Del
Alarm list window			
Mute the current alarm	Ctrl (Win) /		m
	Command (MacOS)		
Designate the selected alarms	Ctrl (Win) /		f
as false alarms	Command (MacOS)		
Select all alarms	Ctrl (Win) /		а
	Command (MacOS)		
Select one or multiple alarms	Ctrl (Win) /		left mouse button
	Command (MacOS)		
Select multiple alarms		Shift	left mouse button
Select different alarms			Up/Down/Left/Right

View Cell Elements

On a view cell, the control elements are different with different types of network cameras. 3 major types are listed below with applicable screen elements:

Fixed cameras:
 Snapshot - Thumbnail search - Smart search - Replay.
 Fisheye cameras:
 Fisheye cameras:
 Fisheye cameras:
 Fisheye cameras:
 Fisheye display mode - Snapshot - Thumbnail search - Smart search - Replay.

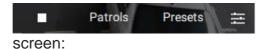
The Auto pan function applies only to the Regional views. Select a regional view, and click the Auto pan button. The Regional view will pan from side to side to cover more viewable regions. If a fisheye is mounted on the wall, a regional view with auto pan can cover a panoramic view region.



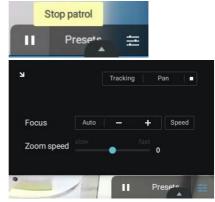
3. **PTZ** cameras: Smart search - Replay. For information about PTZ control, refer to the discussion on PTZ on page 71.

To exert PTZ control, first click on this button to enable PTZ control.

When PTZ control is enabled, the following controls are available on the



Click Patrols or Presets if these have been configured on the PTZ camera. You will need to open a web console to the camera to configure preset positions.



The PTZ settings tab allows you to enable PTZ Tracking and the Pan functions. You can also adjust the Zoom and Focus speed, or manually adjust the focus. Please refer to the camera User Manual for more information about these functions.



For speed dome cameras that come with a wiper blade, the wiper blade control button will be available on the toolbar.

You can use the mouse wheel to zoom in or zoom out on the screen. The zoom ratio is shown on the screen for half a second.



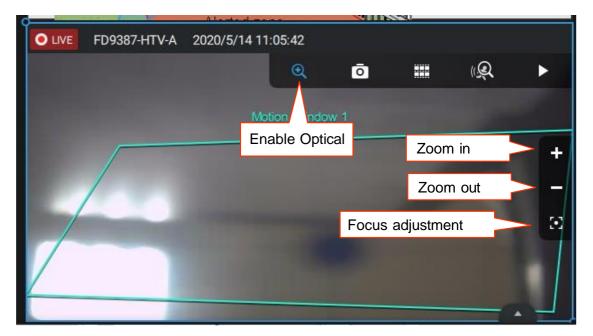
When PTZ is enabled, the zoom buttons and a home button are displayed on the right-hand side of the view cell.

For more information about Snapshot, Thumbnail search, and the Replay functions, please refer to their specific help pages.

(Q) ō Enable Optical - Snapshot -► 3. Motorized lens cameras:

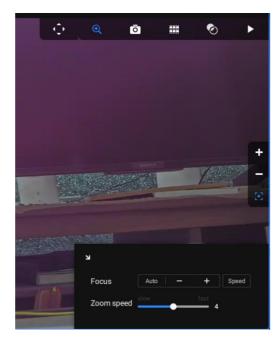
Thumbnail search - Smart search - Replay.

For cameras that come with motorized zoom lens, click on the Enable Optical button. You can zoom in or zoom out on the scene.



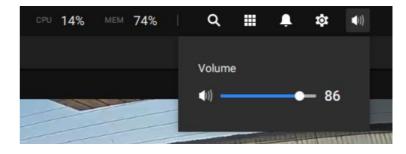
Click on the Focus adjustment button to bring out the focus panel. If you find the image is out of focus, you can use the +, -, or Auto buttons to regain the best image focus.

You can use the Auto scan function to let the camera automatically find the best focus. The process may take up to 20 seconds.



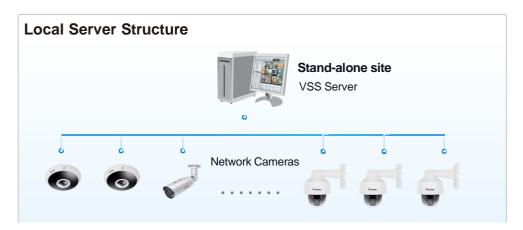
Audio

For a view cell housing a camera with an audio input, you can tune its volume using the slide bar on the tab panel.



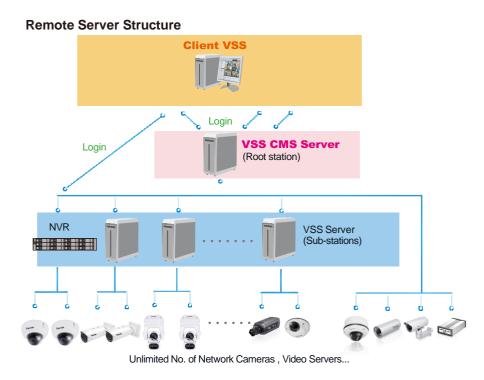
Server and Client Components

VSS Server provides a centralized management site for video recording. Users can log in and modify the server's configuration, edit the server's recording storage, configure schedules, and many other functions. You can browse the recorded video database and video clips related to specific events on the server.



For users who manage large-scale surveillance deployments, please plan the hierarchical structure first. Then you can start to add cameras to each station and connect these sub-stations to the root station. The whole hierarchical management system is thus constructed. VIVOTEK's NVR stations can also be included as sub-stations. The Logical Tree view becomes the default.

A host with the VSS installed is recognized as a stand-alone station. All the functions can be simultaneously performed on one single station.



Please refer to the Stations page for how to enlist VSS sub-stations.

Chapter 2: Starting Up

Double-click the VSS icon on the desktop to start the VSS main page.

When started the first time, the server automatically polls the local network for reachable network cameras. For cameras that come with pre-configured User Name and Passwords, the server prompts for entering credentials for the access to cameras. Check out the cameras' MAC addresses to identify the cameras.

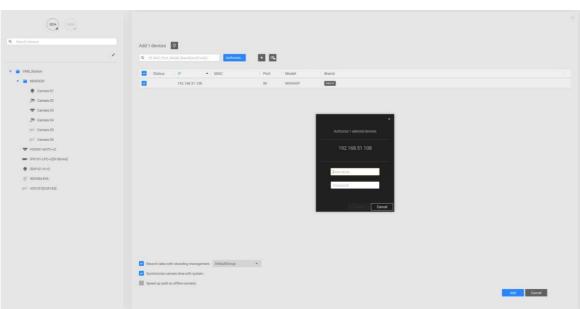
The cameras found within the network will be listed. If the need should arise, you can use the Search panel on top to locate specific cameras using their IP, MAC, Port, Model name, or brand name (ONVIF/VIVOTEK).

Use the Add device button to manually add a camera with its known IP or domain name.

Use the Import Device List button to recruit cameras in a previously-saved device list (CSV files).

Use the Authorize button if the camera found in the Search panel needs credentials.

When search is done, delete the alpha-numeric characters in the search field to return to the device list.



Use the Refresh Dutton to search the local network again.

2-1. Selecting Devices

Use the checkboxes in front of the listed devices to determine which devices will be recruited to your configuration. By default, all cameras are selected. When the selection is done, click on the Next button at the lower right screen.

If any of the selected devices requires credentials, the authorization window will prompt.

NOTE:

For cameras that come without password protection, you should open the Shepherd utility to locate and open a web console and configure a password for protecting the access to the camera. If a brand new camera (with no password) is selected for your VSS configuration, it will join your configuration without the password protection.

			Language				
FD9181-HT							
Configure password At least 8 characters with no space, one alphabet character(uppercase or lowercase), and one numeric character							
User name :	root						
User password :	•••••	Medium					
Confirm user password :	•••••						
	 Enable https connecti configuration for pass 						
*The new password will be applied to all	connections						
	Sa	Cancel					

2-2. Recording Options

Click **Settings** > **Recording** > **Recording options**. The Recording options window will prompt.

You can configure recording schedules or select the storage options, including the configuration of an external NAS storage.

Settings		Rei	cording n	nanagement						
Percolleg fortow Broken Broken	Archive name DefaultGroup Station VMI.Station 21.49 CB evolution of 931.51 CB									
Falson	Storage • New storage								Recycle Options	
Local DB	D:\Recordings									
	5 cameras Select cam	MB6								
	Name	IP.	Streaming	Schedule			Seamless recording	Activity Adaptive Stream		
	All cameras				(. 					
	SD9384-EHL	192.168.51.120	1 -	Events only		۰.				
	VC9101[CU9183]	192.168.51.178	1 *	Eventsi only		©.,				
	FD9291-EHTV-v2	192.168.51.57	1 .*	Continuous						
	iP9191-LPC-v2[9-50m	192.168.51.101	1 *	Continuous			III 🔺			
	SD9161-H-v2	192.168.51.159	1 •	Continuous			11 🔺			
										Cancel

Click on the Schedule column on the Camera list for a recording option: **Continuous recordings**, **Events only**, **None**, or **Default Schedule**, or **New template**. You can apply a schedule template for all cameras or configure individual schedules for different cameras. When using the Event-triggered recording, a pre-event and post-event time can be configured. An Edit pane is available by clicking the Edit **Set** button.

You can manually create a recording template using the **New template** option. When done, each configured template will be listed below.

5 cam	neras s	elect cameras				
Na	ame	IP	Streaming	Schedule		Seamless recording
	cameras			Schedule_work_hours	- /	
FD	08366-V	192.168.4.150	1 💌	New template	ø	
FD	08377-HV	192.168.4 <mark>.1</mark> 71	1 👻	Continuous	ø	
VS	\$8100-v2	192.168.4.172	1 💌	None	ø	
FE	9391-EV	192.168.4.178	1 💌	Default Schedule		
FE	9191-v2	192.168.4.149	1 💌	Schedule_work_hours Schedule_work_hours	• /	

			Add	l a schedule template			×
	te name Schedule						
00.00							Sat
				~			
		0430~18:00					
		Continuous	and -				
				712			
09:00 10:00							
10:00							
12:00							
13:00							
						^	
						\sim	
						> \	
					2		
22:00 23:00							
23:00							
							Add Cancel

Click and hold down on the time cells, and drag the mouse to include the time span of your preference. The minimum selectable unit is half an hour. You can select separate and multiple time spans on the template.

Enter a name for the template, and click **Add** to save your template.

The same configuration window applies to both the Schedule template and the customize schedule windows.

If the **Events only** option is selected for the new template, you can determine what kinds of events will trigger the recording. Use the pull-down menu to select Events only.

				Ad	d a schedule template				×
Templat		Schedule							
	Sun		Mon	Tue	Wed	Thu	Fri	Sat	
00:00	- Cont								
01:00									
02:00				5	Select trigger events	×			
03:00									
04:00 05:00				Motion					
05:00			04:30~18:00	PIR					
07:00			Events only 👻	Tampering detection					
08:00			\$	PPTZ					
09:00				Line crossing detection					
10:00				Intrusion detection					
11:00				Loitering detection					
12:00									
13:00				Face detection					
14:00 15:00				Crowd detection					
16:00				Zone detection					
17:00				Smart tracking					
18:00				People running detection					
19:00									
20:00						Apply Cancel			
21:00									
22:00									
23:00									
24:00									
								Add Cance	el

When Events only is selected, click on the 🔅 Settings button to proceed.

The applicable event types will be listed. Select the types of event triggers that you prefer. Click **Apply** to leave this page. By default, all applicable event triggers will be selected.

Select trigger	events	×
Motion		î
PIR		
Tampering detection		
РРТZ		
Line crossing detection		
Intrusion detection		
Loitering detection		
Face detection		
Crowd detection		
Zone detection		
Smart tracking		
People running detection		-
	Apply	Cancel

Back on the Recording options page, select the new template as a scheduling option. Use the menu on the top to select a scheduling template for all cameras.

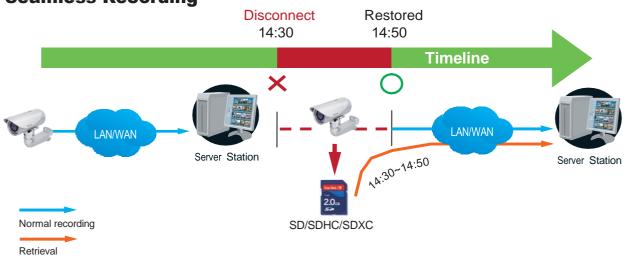
Mercordings							Recycle 0
	-						
	-						
ameras Selectour	-						
ameras Select can	9735						
ameras Select carr	-						
ameras Select can	Heat .						
	P.	Streaming					
			Events only	1			
VC9101[CU9188]	192,168.51.178	1 .	Continuous	1	11 🔺		
FD9391-EHTV-y2	192.168.51.57	1 *	None	1	III 🔺		
IP9191-LPC-v2[9-50m	192.168.51.101	1 .*		1	11 A		
SD9161-H-v2	192.168.51.159	1 *			11 A		
	Al cameras SD5384-EHL VC9101[CJ9183] FD8091-EHTV-v2 [P9191-LPC-v2[9-50m.	All cameras SD9384-6HL 192,148,51,120 VC9101[CL9183] 192,148,31,176 FD9391-6HTV-/2 192,148,51,57 IP9191-LPC-v2[9-50m. 192,148,51,101	All canness 1 1 2 509584-0% 192.166.51.70 1 - 1 - V09101[QuH88] 192.166.51.70 1 - - 1 - F09391-0HTV-V2 102.166.51.70 1 - - 1 - F09391-0HTV-V2 102.166.51.70 1 - - - -	All cameries Tanglate 1 E00984.64. 192.148.51.120 1 Note tanglate VCV1012010482 192.148.51.120 1 Note tanglate Op0984.011.78 1 1 Continues P09984.011.78 1 1 Note tanglate 01111.111.111 1 + Continues 01111.1111.111 1 + Note tanglate	Al caminas Tanglato 1 Image of the sector o	Ad camerals Template 1 // E00984.64. 192.146.51.120 1 New Instrukt // // VCV1010201788[192.146.51.79 1 New Sets soly // // // VCV101021781[192.146.51.79 1 News // // // VCV101021781[192.146.51.79 1 News // // // VCV10112171 1 News //	At camarulas Tanglab.1 Imaglab.1 Imaglab.1

Make sure a Schedule mode is selected when you leave this configuration step.

B Settings		Recording	managemeni	ţ		
Recording systems	Archive name DefaultShop	Static	01 VMS_Station 931.51 GB			
Exclup Falsore	Storage • New atorage					Regrete Options
Local D6	5 Cameras Gent canvas					
	Name	Streaming	Schedule		Seamless recording	Activity Adaptive Stream
	All cameras	1	Template-1	• /		
	SD9384-EHL 192.168	51.120 1 +	Continuous			-
	VC9101[CU9183] 192.168		Events only	- 0,		
	FD9391-EHTV-v2 192.168	51.57 1 *	Continuous			8
	IP9191-LPC-v2[9-50m. 192.168	51.101 1 +	Template-1	- /		
	5D9161-H-v2 192.168	51.159 1 +	Templaté-1	. /		
						Appy

Seamless Recording

Seamless Recording safeguards critical videos in the occurrences of network disconnection. In the event of temporary disconnection, video is stored in individual cameras' SD/SDHC/SDXC card; and once the connection is restored, a VSS server can automatically resume the recording. More remarkable is that, a VSS server can simultaneously retrieve the time-tagged videos that were temporarily stored on SD/SDHC/SDXC cards. For information about the latest firmware/software revisions that support this feature, please contact your sales representatives or technical support.



Seamless Recording

The video data retrieved from SD/SDHC/SDXC card also include event-triggered recordings such as pre- or post-event footages, if events were detected during the network outage.

The Seamless Recording feature is enabled when inserting, updating, or batch inserting cameras in the Camera Management window. The firmware/hardware compatibility of this feature is automatically detected, i.e., this feature is not available when a non-compliant camera is attached. If a compatible camera is attached, a checkbox will be available as shown below.

If a camera comes without an SD card, the SD card presence is detected with a warning message.

To enable Seamless recording, find the associated option in **Settings** > **Recording options**, and select the Seamless recording checkboxes. Camera models that support the Seamless recording option will have it listed.

an 181 an i+							
igs		Recording m	nanagement				
VMS,Station	Archive name	efaultGroup	Site V 5.95 GB available of 1				
	Storage + New st	lorage					Recycle Options
	D:\Recordings						
		t cameras					
		t cameras	Streaming	Schedule		Seamless recording	Activity Adaptive Stream
	5 cameras Selec		Streaming	Schedule	·	Seamless recording	Activity Adaptive Stream
	5 cameras Selec		Streaming	Schedule Continuous	•		
	5 cameras Seice Name All cameras	IP					
	5 cameras Seice Name Al cameas 10.17.2.49	IP 10.17.2.49	1 *	Continuous	*		

Activity Adaptive Stream

■ Activity Adaptive Stream: (Note that this feature may not be available for some older models)

This option will activate the frame rate control according to alarm trigger.

The frame control means that when there is a triggered alarm, the frame rate will raise up to the value you've configured on the Video quality page.

If you enable adaptive recording on a camera, only when an event is triggered on a camera will the server record the full frame rate streaming data; otherwise, it will only request the I frame data during normal monitoring, thus effectively saves bandwidth and storage space.

The alarm trigger includes: motion detection and DI detection.

On individual cameras, you can configure the following:

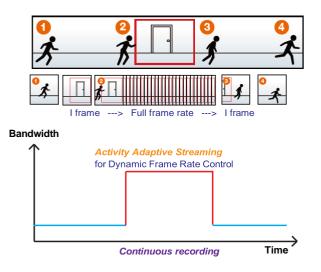
Pre-event recording and post-event recording

The Network Camera has a buffer that temporarily holds data for a period of time. Therefore, when an event occurs, the camera can retrieve image frames taken several seconds ago. Enter a number to define the duration of recording before and after a trigger is activated.

- Priority: Select the relative importance of this recording (High, Normal, or Low).
- Source: Select a video stream as the recording source.

NOTE:

- * To enable adaptive recording, please make sure you have configured the trigger sources such as Motion Detection, DI input, or Manual trigger.
- * When there is no alarm trigger:
 - JPEG mode: record 1 frame per second.
 - H.264 mode: record the I frame only.
- * When the I frame period is > 1 second on the Video settings page, firmware will force decrease the I frame period to 1 second when the Activity Adaptive Recording feature is enabled.



2-3. Storage

By default, VSS will check if the D: drive is available. If no other disk drives can be specified, the system drive C: will still be defined as a storage option. Other disk drives in the system, and the default storage volume (configured in the initial setup) will be listed.

You can add a NAS storage's share volume as the additional storage option. Enter the necessary information for access to a network share. Enter and select a NAS path. The share will then be available for video recording.

	Server	NAS	×
Select NAS path			
★ 20200604		\\192.168.51.137\D	2D19059D5\20200604
14		910.02 GB available of 912	36 GB
1516			
17			
		Restore recordings fro	om this path
			Select Cancel

Select storage volumes each by a single click.

Click **Ready to use** to continue. The server will take several minutes synchronizing configuration between server and cameras, and the time settings between them.

Adding NAS (Network Attached Storage) as a Storage Option

You can also record videos to a networked storage.

- 1. Click the Add archive button
- 2. Enter a name for the configuration.
- 3. Click the Add storage button + New storage

 B Million B Million 	Archive name Station vet_season the season of Bytes					
 Venturing 	Storage (* Awadange	Retycle Options				
	0 cameras End cames					
		Cancel				

4. Click the + New NAS button.

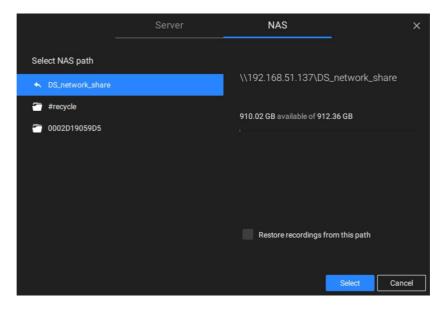
Server	NAS	×		NAS	×
New NAS storage			New NAS storage		
IP/Domain name			192.168.51.13	7	
Host			Host		
User name			DS213air		
Password				•	
			Failed to connect		
		Connect Cancel			
					Connect Cancel

5. Enter the NAS storage's address and the credentials for access to the networked storage. When done, click the **Connect** button.

6. The NAS storage should appear on screen. The connection may take several seconds. Single-click on the NAS storage to select its network shares.

Server	NAS	×
Select from	+ New NAS	

7. The NAS storage's network shares should be listed. Single-click to select a network share.

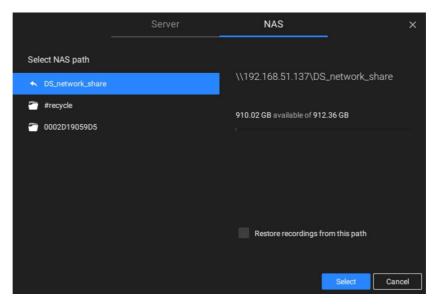


8. Click **Select** when done. Note that you can repeat the previous process to select multiple network shares from a single NAS storage.

53

	Server	NAS	×
Select NAS path			
♠ 0002D19059D5		\\192.168.51.137\D	share\0002D19059D5
20000101		910.02 GB available of 912	36 GB
20000102		1	
20200604			
20200605			
C NCMF			
		Restore recordings fro	om this path
			Select Cancel

9. The NAS storage's network shares should be listed. Single-click to select a network share.

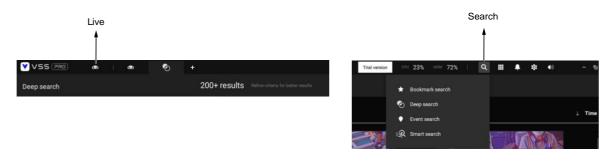


10. Click **Select** when done. Note that you can repeat the previous process to select multiple network shares from a single NAS storage.

	Server	NAS	. ×
Select NAS path			
♠ 0002D19059D5		\\192.168.51.137\D	share\0002D19059D5
20000101		910.02 GB available of 912	36 GB
20000102		I	
20200604			
20200605			
MCMF			
		Restore recordings fro	om this path
			Select Cancel

2-4. Starting Up - Main Page

You will be defaulted to the Live view once the main page displays. Another tab window is the Search panel where you can search recorded events and recorded videos.



On the initial startup, the server should fill the live camera feed to the available 2x2 view cells (4). You should then select a preferred layout, e.g., 3x3 or others, using the Layout pull-down menu.

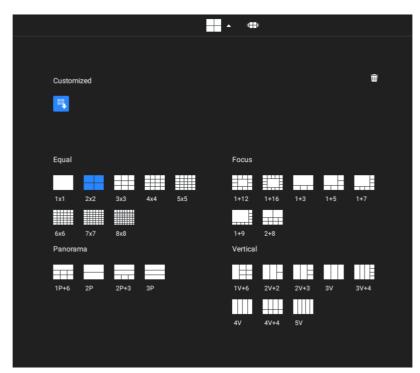
The available layouts are categorized into 4 types: Equal, Panorama, Focus, and Vertical.

Equal: 1x1, 2x2, 3x3, 4x4, 5x5, 6x6, 7x7, 8x8.

Panorama: 1P (Panoramic)+6, 2P, 2P+3, 3P. (applies to fisheye cameras)

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. (applies to corridor view)



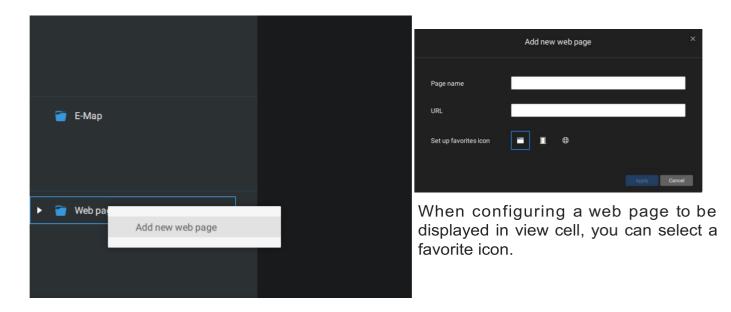
To design and customize a layout, please refer to the Customizable Layout page.

You can then fill in the view cells by dragging and dropping cameras into the view cells. While dragging, a name tag displays. All cameras should be listed under the VMS Station Device Group.



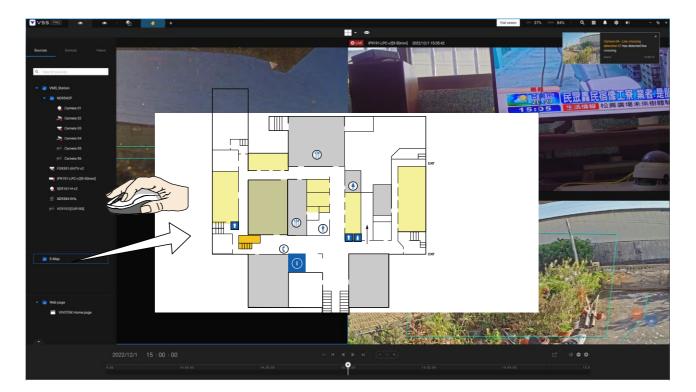
You can swap two view cells by dragging one on top of another.

You can also configure a view cell to display a web page by a right-click on the Web page option on the left device pane. Enter a name and the URL address.



You can also fill in an E-map by dragging and dropping a pre-configured E-map into a specific view cell. Click on the E-Map tab to select a pre-configured E-Map. Note that an E-Map should be placed into a larger view cell.

Depending on the resolution of your monitor, a view cell can be too small for an E-Map. For example, for an HD monitor (1920x1080), a single view cell from a 3x3 layout will have a resolution of 640x360. View cells larger than 330 (width) x 300 (height) pixels can contain an E-Map.

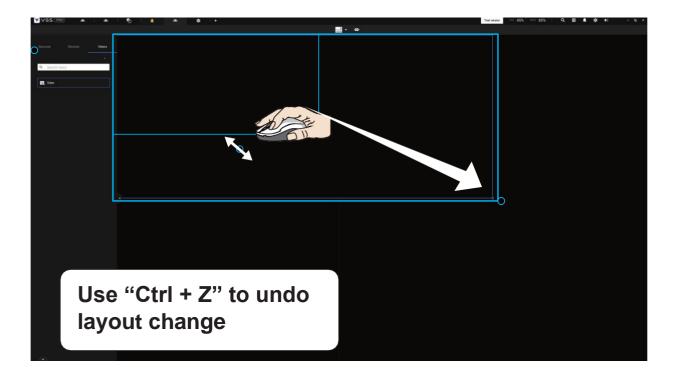


2-5. Customizable Layout

The standard layouts can be manually configured to form layouts of your choice. Depending on the complexity of your design, you should start with a multi-cell layout.

Click and drag the corner mark on a view cell. Drag across the screen and release the mouse button to enlarge the view cell. Choose a standard layout of many view cells, e.g., 7x7 or 8x8, if you want to design a complex customized layout. You can create a special layout, e.g., an especially wide view cell for a multi-sensor camera, such as the panoramic MS-8392.

To abandon a customized layout, simply select a new layout from the layout window. You can also use the Ctrl + Z keys to undo your changes on the layout.



To preserve your customized layout, click to open the layout window. Click on the Add current layout subtron. You may then change the name of your layout by double-clicking on its name.

To remove a configured layout, drag it to the garbage can icon on the upper right.

			• •				
Last modified	Customized						Ŵ
		-					
	layout lay	out					
Equal			Focus				
1x1 2x2 3x3		x5	1+12	1+16	1+3	1+5	1+7
6x6 7x7 8x8			1+9	2+8			
Panorama			Vertical				
1P+6 2P 2P4	+3 3P		1V+6	2V+2	2V+3	3V	3V+4
1P+6 2P 2P4	F3 3P		10+6	2v+2	20+3	3V	3V+4
			4V	4V+4	5V		
				4974	54		
					54		
					54		
				4714	JV		
	_			4714	JV		
Digital zoom	Ctrl+Sh	ift+Z		4774	54		
Digital zoom Snapshot	Ctrl+Sh Ctrl+Sh			4774	57		
	Ctrl+Sh				57		
Snapshot Viewing quality	Ctrl+Sh	ift+C			57		
Snapshot Viewing quality Display informa	Ctrl+Sh	ift+C Auto 🔉			50		
Snapshot Viewing quality	Ctrl+Sh	ift+C Auto 🔉			37		
Snapshot Viewing quality Display informa	Ctrl+Sh	ift+C Auto 🔉			37		

You can also right-click on the screen to display the Add layout option.

Replace view

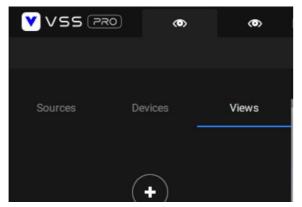
You can then click Device Group, and start filling your customized layout with camera views. When done, click **Add a view**.

Also remember to save the current layout as a view, and save your configuration in **Settings** > **Preferences**.

2-6. Saving a View

When done with arranging view cells, click the View tag.

Save your current layout and view the cell arrangement as a new view.

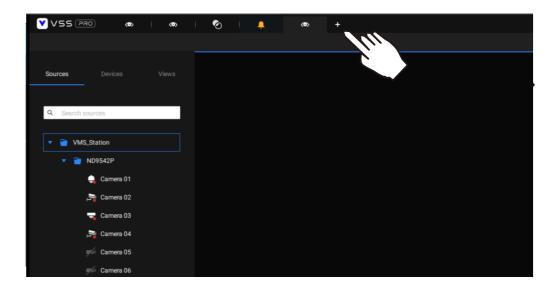


					×
Add	current view as a ne	w view			
Vie	ew				
		_		0	
			Add	Cancel	

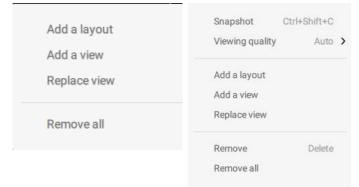
2-7. Add More Live Views

With many cameras in your deployments, you can click the New Tab "+" button to add more Live views.

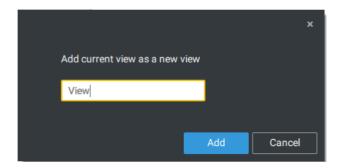
An empty live view will display, and you should repeat the above process to select a layout, and fill in the view cells. When done, save the view.



Right-click on the screen to display the right-click menu. Select Add a view.

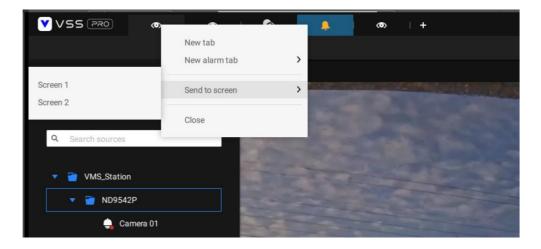


Enter a name for the new view and click **Add** to proceed. The new view will be listed in the View panel.



If you have multiple monitors attached to your server station, you can drag a live tab to a different screen. In this way, you can display live views simultaneously on multiple screens.

Live views can be placed on multiple monitors. Please note that the number of monitors to display live views is determined by the capability of your system.

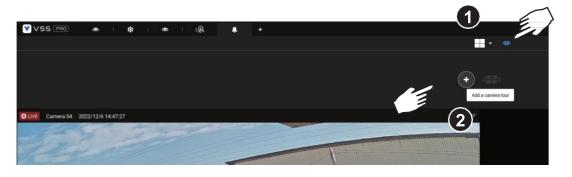


2-8. Tour

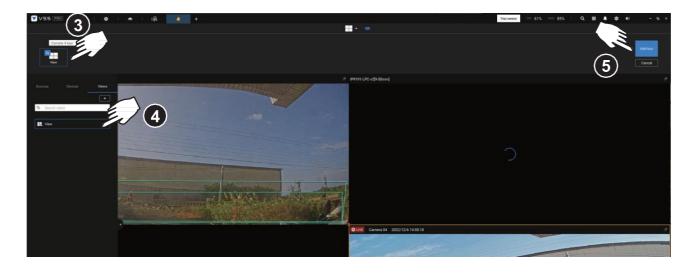
A tour can be configured to consecutively display multiple views. A tour allows users to quickly glimpse through many view cells in a timed pattern. As a tour can contain multiple views, you should design and configure camera views before configuring a tour.

To configure a tour,

- 1. Click on the Add a camera tour 💷 button.
- 2. Click the Add button.



- 3. Enter a name for the tour.
- 4. Single-click to select a view. Select multiple views each by a single click.
- 5. Click the Add Tour button.

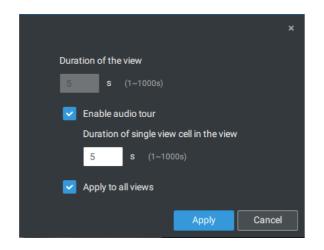


The default for the duration of the display of each view is 5 seconds. You can right-click on each view to display the Duration of each view. You can apply the same duration of all

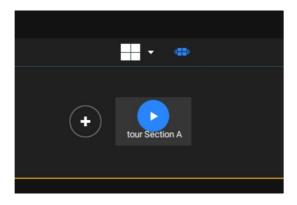
views, or allow each view to display on screen for a different span of time.



You can enable the **Audio tour** option which plays the audio inputs from each view cell for a specific period of time.



Mouse over a configured tour, and then click to start a tour.



When playing a tour, and you want to stop the tour, you can left-click or right-click on the screen.

Click the Tour icon again to return to the singular live view.

2-9. Save Your Preferences

Go to **Settings** > **System** > **Preferences** to save your current layout and display configurations.

Select the options in the startup choices menu to decide what to display whenever your VSS client starts. You can display Live view, Tour, Dashboard, E-Map, or Alarm tab simultaneously on multiple screens.

💙 VSS (270)	@ @ Ø	s (10)			Trial version	43% MM 92% Q III 🐥 :	¢t €l – %
			1000			_	
	è.		(_)	(ii)		•	
	Device	Recording	Alarm	User	System	VIVOCloud	
	Cameras Stations	Recording options Backup	Add & Delete	Users Roles	Lionse SMTP	Account	
	DI/D0 devices	Fallover		NORD	Preferences	NYK	
	Data magnet	Local DB			Identity management		
	External devices				Media		
					Feedback and bugs		
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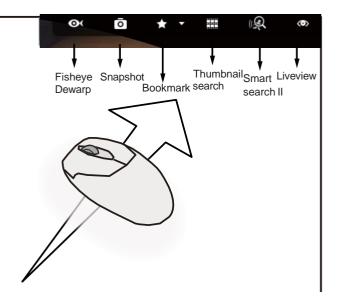
2-10. Playback

To start the playback function, select a camera's view cell (whether in full view or ordinary cell size), then click the playback initiative button (

Default Time: When started, the system normally rolls back to the start of the hour, e.g., your current time is 10:30:00, and the default playback position on the timeline is 10:00:00.

Playback control can be found in 3 places:

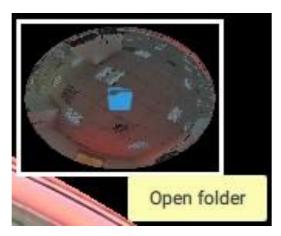
1. **Float Panel**: When Playback is started, swipe your mouse to the upper-right of the view cell to display the Playback float panel.



Fisheye Dewarp: For a fisheye camera, you can select different dewarped views during a playback. Click to select an option.

Snapshot: Click to take a snapshot. A small floating window will stay for 2 seconds. You can click the folder icon to access the snapshot files.

Note that a dewarped, regional view allows producing a snapshot of the regional view.



Bookmark: If you find anything of your interest when viewing the playback, click this button to create a bookmark. It helps when you need to return to the point in time after you review all through the recorded videos. Note that the bookmarked video clips are free from storage recycles. They will not be erased when storage runs short and needs to be recycled.

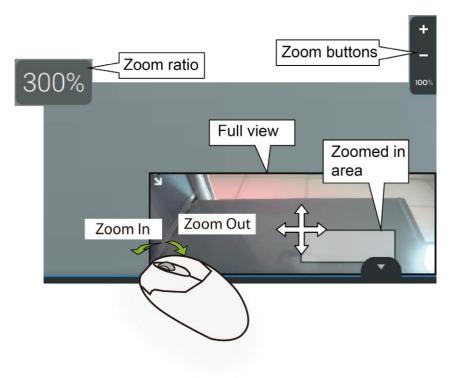
Smart search II: Smart search II is an independent function. Please refer to 2-19 Smart search for details.

Liveview: Click to return to Live view.

2. Right-click Menu: Right-click on the Playback screen to display this menu.

1	Digital zoom	Ctrl+Shift+Z	
\$	Snapshot	Ctrl+Shift+C	
1	Bookmark	Ctrl+Shift+B	
\$	Synchronized play (15:41:56)	Ctrl+Shift+S	
I	Display information		>
I	Data magnet		>
	Add a layout		
,	Add a view		
	Replace view		
	Remove	Delete	
	Remove all	001010	

Digital zoom: enlarges an area by lowering image resolution (zoom in) or shrinks an area by increasing image resolution (zoom out).



Snapshot: Click to take a snapshot. A small floating window will stay for 2 seconds. You can click the folder icon to access the snapshot files.

Bookmark: If you find anything of your interest when viewing the playback, click this button to create a bookmark. It helps when you need to return to the point in time after you review all through the recorded videos.

Synchronized play: When enabled, all cameras in the same view will be playing the video of the same point in time.

The following commands are general purpose commands.

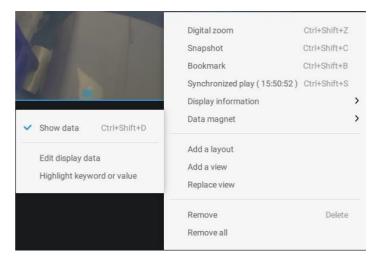
Display information: By default, all display elements will appear on screen for all playback windows. You can use the Edit display information to select more display elements.

They include:

Status, Camera name, Server time, Codec, Resolution, Network throughput & FPS, Fit screen with ratio, POS transaction details (for POS), Data magnet data (Data overlay on screen / Hide data after idle), Motion detection, Rules (VCA), Rule name, Motion cells, Tracking block, Tracking dot, Exclusive area, People detection area.

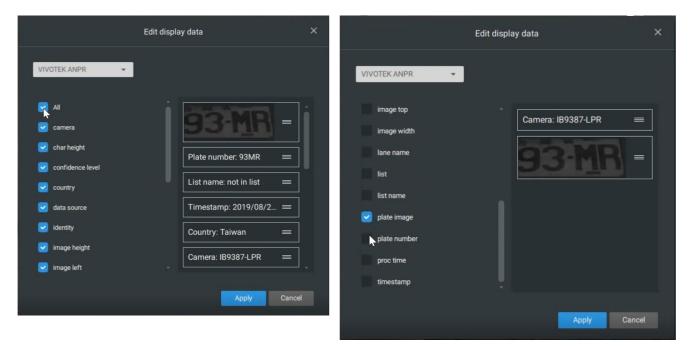
Edit display information		×
	Show Status Substation hierarchy Camera name Server Time Codec Resolution Network throughput & FPS Fit screen with ratio	
	Apply to all view cells Apply Ca	ncel

Data magnet: For 3rd-party applications, such as VIVOTEK's license plate recognition software, you can select to display different types of information. You can use the Edit display data to select or deselect the display elements.



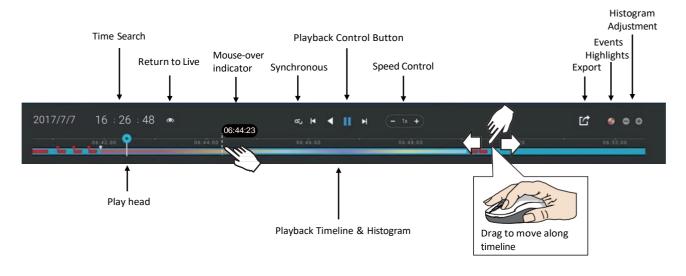
Please note that the display elements can vary for different applications.

Below are the sample screens for applications implemented via the Data magnet.



3. Timeline Panel: This panel appears when Playback is initiated.

The timescale is adjustable (minutes, hours, days, to a max. of 3 days) so you can easily find the required time period and begin playback from that point.



Starting from left to right, timeline control functions will be described as follows:

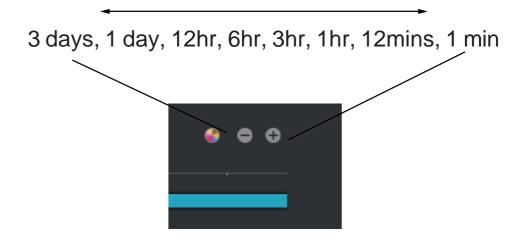
1. **Time Search**: Click on the current date to open a calendar. If you want to review videos recorded in another day, select it from the calendar.

		Dec, 201	б		<	>
Sun	Mon	Tue	Wed	Thu	Fri	Sat
27					2	3
4	5	6	7	8	9	10
11	12	(13)	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
ব						

Blue: days with recordings. Orange bottom line: Today. White: days with no recordings. Click on the current time. You can use the arrow buttons to change the time you wish to playback, or simply enter a preferred number. You can also pull the playhead along the timeline.



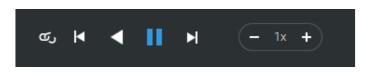
Timeline magnification levels: The default time span is 6 hours. You can change the magnification level for easier browsing. Click the Zoom in and Zoom out buttons to change the timeline time span. The configurable time spans are shown below:



2. Playback control:

From left to right,

- 2-1. **Synchronous play**: This lets all cameras in the same view to playback video of the same point in time. If you perform synchronous playback on a multi-cell view, your computer can be stressed. It is recommended you create a new view with a 2x2 layout, select and insert camera views into it, and begin the Synchronous playback.
- 2-2. **Frame by frame buttons**: Click to move forward or backward to flick through the video frames. This may only display the I-frames.

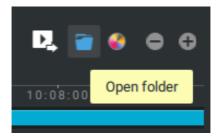


2-3. Forward playback and reverse playback: Click to view the video in the forward or reverse playback manner.

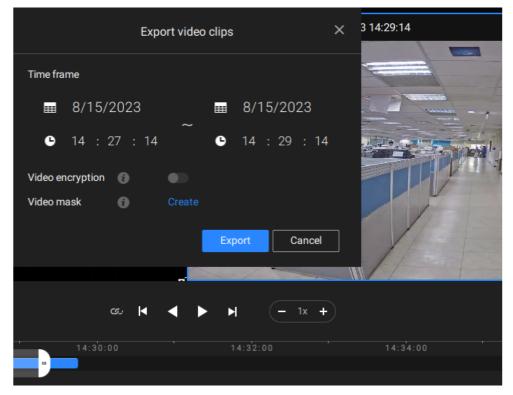
- 2-4. **Speed selector**: The selectable speed ranges from 1/64x to 64x.
- 3. Export Clips: Click the Export Clips button . A range selector will appear. Pull the ends to include the time span you want to export. Note that each end of the selector, when clicked and selected, will turn white, and its location on the timescale is shown on the timeline. When done, click Start to export button.



Depending on the length of video clips to export, it may take minutes to export. When the export is completed, a shortcut to the exported clips is shown. You may then open the folder where the clips are located.

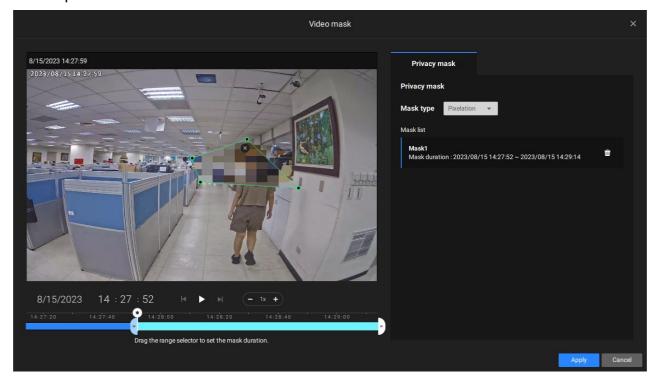


When you export a video, you can assign a password for the encrypted video. Once encrypted, you cannot play the video using ordinary video players. You can only play the video using VSS standalone player after you enter the correct password.



Export video clips	×	
Time frame		
■ 8/15/2023 ■ 8/15/2023		3 14:29:14
• 14 : 27 : 14 • 14 : 29 : 14		
Video encryption 👔 🛑		
Encryption password		
Confirm password		
Video mask Create Video masking is not available when video encryption is enabled.		
Export Cancel		H
œ I)	
14:3 ['] 2:00 14:3 ['] 2:00		14:34

When video encryption is off (default), you can create video masks (available on VSS Professional only; black or pixelated) for specific time frames to protect privacy in the video to be exported.



NOTES:

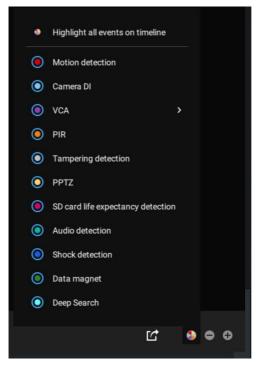
• A video mask overlays the original video and thus alters the raw data.

• Once a video with masks is exported, the video file format becomes 3GP H.264, and thus it is not necessary to use the VSS Standalone Player for playback.

• A video mask cannot coexist with any of the three functions: Video Encryption, Displayed Watermark over Video, or Digital Watermark.

Event Highlights on timeline: Select one or all of the event types to display event tags on the timeline that match those that have occurred in the past.

Note that on the VIVOTEK's Linux-based NVR, the timeline will display the occurrence of an event for a length of 10 seconds since its occurrence.



2-11. PTZ Control

PTZ control refers to the mechanical PTZ, which applies to cameras that are capable of pan and tilt directional control as well as zoom control.

To begin the PTZ control, click on the PTZ button

A set of buttons will appear on the right side of the view cell, with functions arranged from top to bottom as Zoom in, Zoom out, Home, and PTZ control mode. Other advanced PTZ functions will appear in the bottom right corner of the view cell, including Focus, Zoom speed, Patrols, Presets, Pan, Tracking, and Stop.



Zoom in/out

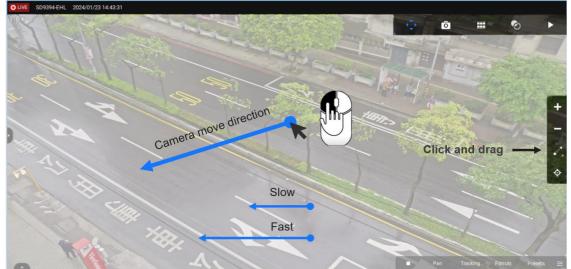
by clicking the zoom in to zoom out button, you can adjust the optical zoom of the camera; you can also use the mouse wheel on the view cell to zoom in or zoom out.

Home

by clicking the Home button 🏩, you can go back to the home position of the camera.

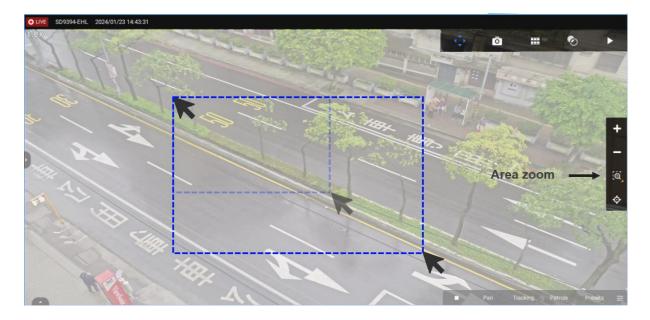
PTZ control mode

The default PTZ control mode is click and drag, which allows you to control pan and tilt by clicking and dragging your left mouse button across the view cell. A light blue trace will appear while you drag the mouse towards the direction you wish to move. The longer the trace, the faster the move. Note that while the camera is moving, you can change the move direction by keeping the mouse button held down. Release the button to stop moving.



You can also click the PTZ control mode button to switch to the area zoom mode, which allows you to draw an area on the view cell for zoom in.

See Appendix C Joystick support if you use VIVOTEK'S joystick.



Advanced PTZ functions

By clicking the patrol and presets button Petrols Presets, there will be a dropdown list that allows

you to select the patrol or preset. By clicking the stop button **button**, you can stop the movement or action of the camera.

By clicking the tracking button, for cameras that support smart tracking advanced, there will be a preset list that allows you to select which preset you want to enable tracking. For other cameras that support smart tracking or auto tracking, the camera will start tracking with the current position.

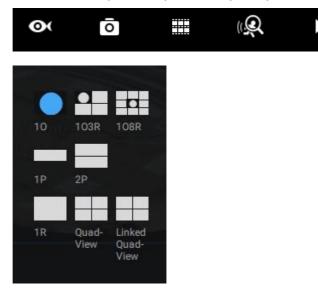
You can also adjust the zoom speed, focus, and focus speed manually or start pan by using the

button

2-12. Fisheye Camera Dewarp Modes

By default, a circular view is displayed when a fisheye camera is successfully connected.

- To display Regional, Panoramic, or a combination of different views,
- 1. Mouse over the view cell of a fisheye camera.
- 2. The onscreen control panel will appear. Click on the Fisheye button.
- 3. The Dewarp mode pane will prompt. Select a dewarp mode.



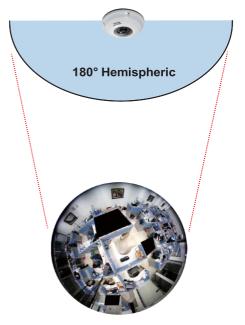
The display modes available are: 10 (Original), 1P (Panoramic), 1R (Regional), 2P (2 Panoramic), 1O3R (1 Original & 3 Regional), 4R (Quad Regional), 1O8R (1 Original & 8 Regional), and 4R Pro (4 Proactive) modes.

Fisheye Display Modes: below are conceptual drawings for different display modes.

10 (Single Original) Display mode:

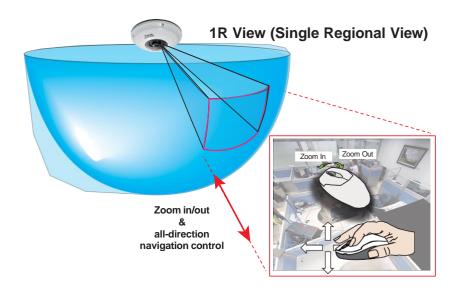
An **Original** oval view covers the hemisphere taken by the fisheye lens.

10 View (Original View)



1R (Single Regional) Display mode:

A **Regional** view crops a portion of the hemisphere as a region of interest. You can zoom in or out or move the view area elsewhere from on the regional view.



A Regional view is dewarped, by correcting images from the distorted oval view to a rectangular and visually proportional image.

1P (Single **Panoramic**) Display mode:

With image correction algorithms in firmware, the hemispheric image is transformed into a rectilinear stripe in the 1P display mode. Viewers can use the PTZ panel or simply use mouse control to quickly move through the 360° panoramic view.

Note that the 1P view is apt for an overview, the Zoom in/out function does not apply in this mode.

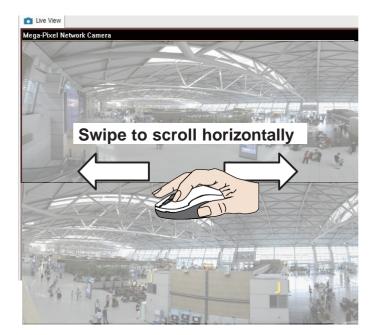
<complex-block>

1P (Panoramic) Mode Screen Control

2P (2 Panoramic) Display mode:

Two dewarped rectangular views are placed one on top of another each showing 180 degree of panoramic view. The 2P view looks like the upper view shows the front of hemisphere, and the lower view the rear half of the hemisphere.

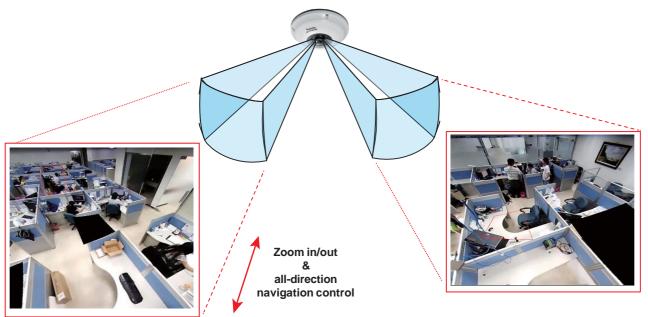
2P (Panoramic) Mode Screen Control



103R (One Original & 3 Regional) Display mode:

Fisheye cameras also support the display of multiple regional views taken from within the same hemisphere, and they can be displayed with or without an Original view in its view cell.

3R View (Regional View)



* Only two regional views are shown for simplicity reason

NOTE:

The various display modes require the support of D3D technologies by your display card on the LiveClient or Playback station. Most off-the-shelf display cards today support this feature.

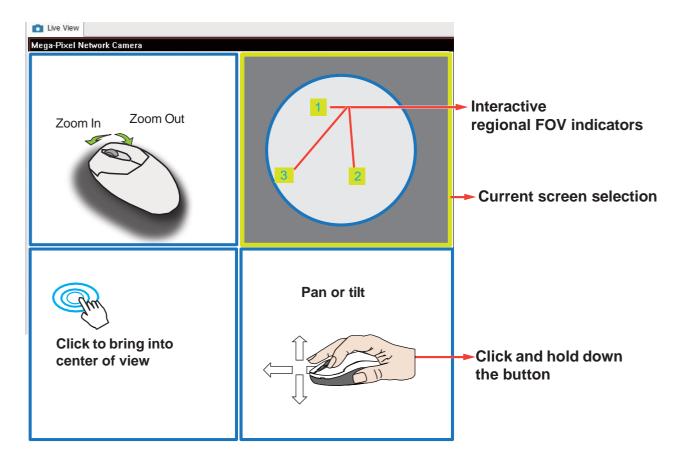
The onscreen mouse control is very agile. Therefore, use the PTZ panel for more delicate moves in a field of view. **Pan** and **Patrol** moves are also supported if you have configured preset PTZ positions in the camera's firmware. Note that the Pan move takes place in the Panoramic and Regional views, while the Patrol function through preset positions applies only in the Regional views.

PTZ Mouse Control

The "Mount type" setting also determines the display modes available to your display modes. Please refer to fisheye camera's User Manual for more information.

A highly versatile mouse control is implemented with fisheye cameras. The same control takes effect on a browser management session, on the LiveClient utility, and even on a video playback screen. See the drawing below for how it works.

You can click and hold down the left mouse button to quickly swipe through the field of view, change the view angle, or use the mouse wheel to zoom in/out on a region of interest. However, the PTZ mouse control is only available in the **"R" (Regional) mode**. In the **Panoramic mode**, you can only scroll horizontally across the 180° or 360° panoramic view.



1O3R (Original & Regional) Mode Screen Control

Below are the conceptual drawings for the other display modes. The available display modes can differ with different mount types:

Regular: 10, 1P, 1R, 103R, 4R.

Wall mount: 1P2R, 1P3R.

For more information, you can refer to fisheye camera's user documents.

4R (Quad Regional) Display mode:

Live View Mega-Pixel Network Camera	
Regional View #2	Regional View #1
Regional View #3	Regional View #4

Live View Mega-Pixel Network Camera	
Regional View #2	Regional View #1
Regional View #3	Regional View #4

108R (One Original & 8 Regional) Display mode:

Mega-Pixel Network Ca	mera 201	1/09/01 05:41:35
Regional View #3	Regional View #2	Regional View #1
Regional View #4	Original View	Regional View #8
Regional View #5	Regional View #6	Regional View #7

4RPro (4 Regional Proactive) Display mode:

3rd-party Fisheye Dewarp

Via manual calibration, users can utilize dewarp functions for 3rd-party fisheye cameras through the Enable fisheye lens dewarping, and select a mount type. You can then align the blue circle with the fisheye's circular view.

When the calibration is done, you can select different dewarp modes in VSS using the transition button on the upper right of the view cell.

2-13. Alarm

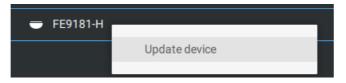
The Alarms can be configured to perform a series of actions when different events occur. Alarms can be used to automatically react to possible threats. For example, the VSS server can start a recording or send an Email notification when Motion detection is triggered.

Settings			Aları	m management			
				ک ک			Q Search alarma
 -1 -2	Camera Server	Select triggers		At Controls Select actions	Addysteladar Administrative Administra	×	an Gaol
No.	Name	If the following is triggered	By	Do	On/10	At	
1	Alarm	Virtual BOERS 4294	Virtual trigger	Add bookmark	509384-0HL	··· Aheays	
2	Alarm	Devices have been removed	Motion detection			Alwaya	
3	Alarm	Devices have been removed	Line crossing detection	Send live streaming	Target has been removed	Always	

A wide variety of triggering conditions can be applied, including:

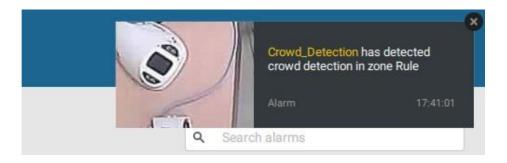
General		
 Motion detection 	•	IR (Infrared)
Camera DI	•	PIR (Passive Infrared)
Camera DO	•	Tampering detection
Temperature	•	Stop recording
Recording error	•	Audio detection
 Video loss (Video server only) 	•	Shock detection
SD card life expectancy detection		
Video Content Analysis		
 Line crossing (VCA) 	•	Intrusion detection
Loitering detection	•	Face detection
Missing object detection	•	Unattended object detection
Crowd detection	•	Smart tracking
Zone detection	•	People running detection
Parking Violation detection	•	Restricted Zone detection
Trend Micro IoT Security	•	
 Brute force attack 	•	Cyber attack
Quarantine event		

Note that some of the triggers require that you open a web console to individual cameras. For example, VCA and Motion detection windows have to be manually configured on each camera before they can be configured in the Alarm settings.



If you select a trigger and you cannot find a corresponding device, you need to open a web console to that device. Make sure the corresponding VADP is running. Open the VSS device tree, right-click on the device to perform a manual refresh "Update device" to acquire the latest configuration update.

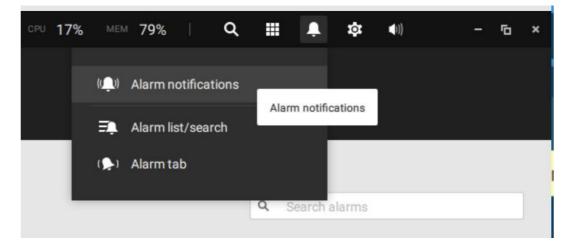
If a triggering condition is associated with event recording, an event prompt will pop up on the screen when a triggering condition is met. For example, the number of people exceeds a preset threshold in a Crowd Detection configuration. The sample prompt is shown below. The related footage can be played back by clicking on the event entry.



The alarm notification can be turned off by clicking on the Alarm tab. You can enter the time span when you do not want to receive notifications and the notifications will automatically turn on after the time span. Enter the number in the mins field. The max. time span is 9,999 minutes.

The notification configuration is kept on the client computer.

When the Alarm notification is turned off, the Alarm tab icon is greyed ou igaplus



Individual VSS clients can configure which kinds of alarms can be delivered to them by selecting the alarm types listed in "Turn on the notifications you want to receive." When the individual alarms are turned off, the following client-side alarm actions will be disabled on the client computers:

- 1. Notification.
- 2. Send live streaming.
- 3. Go to E-map.
- 4. Sound the alarm.

		Alarm notification
ŝ		
	Set up alarm notification for this client computer	
	Turn off all alarm notifications	
- 1	Turn off all alarm notifications temporarily (59 minutes left, until 10:19, 4/21)	
	60 mins	
	Turn on the alarm notifications you want to receive	
Ē		
	Turn on the alarm notifications you want to receive	

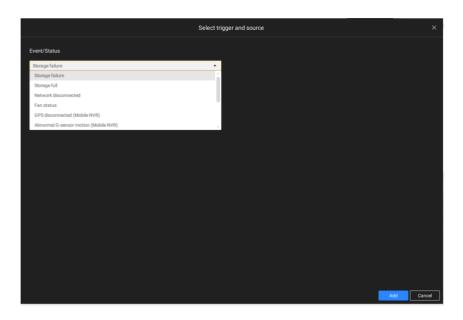
		Alarm notificat				
Set up alarm notification for this client computer Turn off all alarm notifications Turn off all alarm notifications temporarily Turn on the alarm notifications you want to receive					Q. Search alarms	
No. Name						
🛑 1 Alarm	IB9387-HT-A Window 1	Motion detection	Start to record videos	IB9387-HT-A	Always	

Note that the default for the alarm notification is "Turn on the alarm notification you want to receive." If you turn off the alarm notification, you need to re-activate it after you turn off the notification the first time.

2. Server and NVR triggers

2. Server and INVR triggers	
Network disconnected	These can be used to send maintenance notifications.
 Storage failure 	
Storage full	
Fan status	
 GPS disconnected 	The GPS and G-sensor related options apply to the Mobile
(Mobile NVR)	NVR that comes with the GPS and G-sensor. GPS can be
 Abnormal G-sensor 	used to track the speed and location of a vehicle, while the
motion (Mobile NVR)	G-sensor can be used to detect abnormal impact.
Speeding (Mobile NVR)	
 Number of remaining people 	For VCA-capable cameras, the alarm can be triggered when the number of people staying within a specific area has exceeded the preset threshold. For example, when too many people are waiting in line in front of a cashier.
	This function requires appropriate configuration on the counting camera(s).
 Brute force attack (Trend 	These can be configured as alarm triggers to notify the
Micro IoT)	administrator that malicious attacks have occurred. Note
Cyber attack (Trend Micro IoT)	that these triggers are available with NVRs that come with the protection of Trend Micro IoT packages.
• Quarantine event (Trend	
Micro IoT)	

* Note that you should use the pull-down menu to select a triggering condition, and then click to select a mobile NVR.



Note that the alarms will be received into the Alarm list window. The previous Alarm Search window is replaced by the Alarm list function.

The Alarm tab window is used to display the live video stream when an alarm is triggered, and its responding action is configured as "Send live streaming."

For I/O box configuration, please refer to the I/O Box page.

3. I/O box and TCP triggers

•	DI/DO Device DI	This applies when an external I/O box is applied, e.g.,
•	DI/DO Device DO	Advantech's ADAM I/O box.
•	TCP Message	TCP message comes from the peer VSS servers or external sources (such as an access control system) via the analysis of received TCP messages over the 3444 port. This is a paid feature.
•	Data Magnet	Triggering conditions can be acquiring data from 3rd-party software, such as the character height, image width, list, list name, country, from an LPR software, etc.
•	Virtual trigger	A virtual trigger allows users to create a button on live view to trigger Alarm actions, e.g., go to a camera preset, add a bookmark, play an audio file, send HTTP requests, etc.

To configure a TCP message trigger,

Select TCP message as a trigger type, and enter a description, such as a short term, for VSS to listen and analyze data packages.



Below are the messaging parameters:

- 1. text contains: Messages will be received if some of the textual messages match the keywords.
- 2. text matches: Textual messages must be exactly identical.
- 3. Case sensitive: The upper or lower case letters used in the messages must match within the messages.

You can use Telnet to send a small amount of data matching the term you entered in the TCP message configuration window. A TCP message event will be triggered, and you should see the event prompt as follows.



Virtual triggers have the following benefits:

1. More operation control, e.g., got to camera preset, add a bookmark, play an audio file with network audio devices.

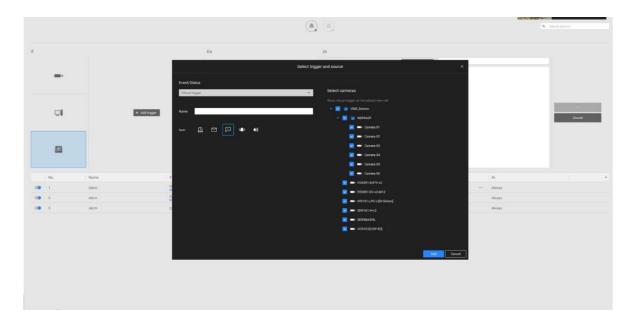
2. Integrating 3rd-party systems and devices; using the Send HTTP requests; setting DO status commands.

To configure a Virtual trigger,

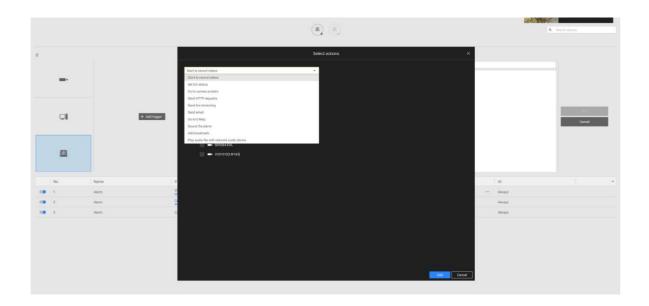
Go to Settings > Alarm > Add alarm.

Select the External device event, and then click on the Add trigger button.

The Select trigger and source window will prompt.



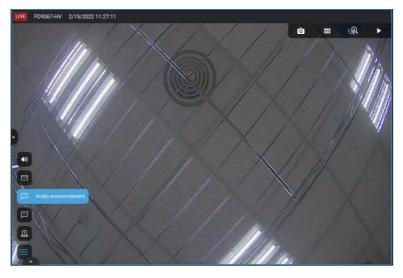
Select the alarm action.



With a pre-configured virtual trigger, a trigger button appears on the live view.



When activated, all the virtual trigger buttons will appear allowing you to perform the associated actions.



Select the External device event, and then click on the Add action button. The Select actions will prompt.

The available actions include:

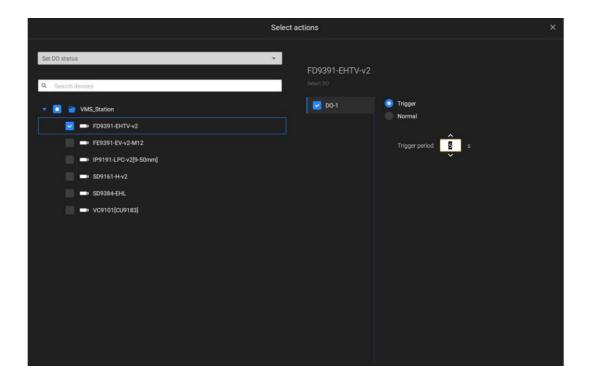
•	Start to record video	•	Send HTTP requests
•	Set DO status	•	Send live streaming
•	Go to camera presets	•	Send email
•	Go to E-map	•	Sound the alarm
•	Add bookmark	•	Play audio file with network audio device
•	Send mobile notification		

Start to record video will record a video clip of the length of 10 seconds (default) on the occurrence of an event. The event recording pre / post event time is configurable. Except for Stop recording, all the other triggering conditions can be associated with this action.

Set DO status will activate a DO connection. For example, to light an illuminator or sound an alarm.

You can select a camera, and its DO pins will appear on the right. You can configure the duration of the DO trigger, e.g., 15 seconds.

If no Trigger period is configured and when there are multiple instances of DO trigger, administration troubles may occur. Use the arrow marks to configure a trigger period. You may also manually enter a number.



Send live streaming action will bring up a video prompt to the Alarm tab window, showing the real time video feed from a specific camera.



Go to camera presets requires you to configure preset points on a PTZ camera before the Alarm configuration, such as a speed dome. Once triggered, the PTZ camera lens will move to a preset position.

The VSS server automatically disables unavailable options. For example, when the DO option is selected, the cameras that do not support DO connections will be hidden.

Send email opens a configuration page where you should enter valid email addresses as sender and recipients. It is required that you configure an SMTP server for mail delivery in Settings > SMTP. Enter Subject and contents. Select the checkbox for including a snapshot of the event. When done, click Add to enable the action.

Go to E-map opens a pre-configured E-map of where the triggering condition occurs. The user can then click on the camera icon on the E-map for an instant viewing.

Add bookmark function saves a video clip of a 10-seconds length. Once triggered, you can open a new view tab > Search > Bookmark search to find the existing bookmarks. The bookmarked video clips will not be recycled during the storage cleaning cycles.

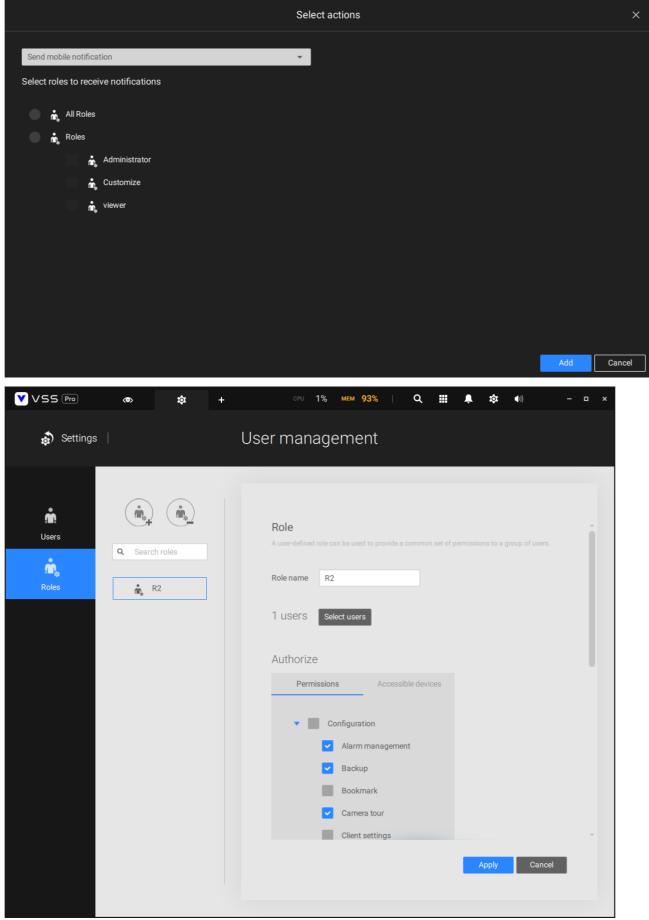
Sound the alarm action provides 5 alarm sounds that will be sounded on the VSS client or server. Your VSS client or server should have speakers for playing the audible alarm.



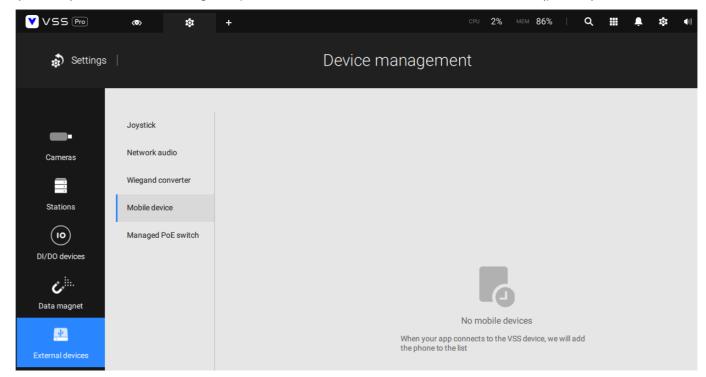
A reachable Mail server and Email accounts must be provided before you can apply the settings.

		Sel	ect actions		
Send email			No SMTP server. Set up SMTP server on Settings > System > SMTP		
Sender's email	username@email.com	_			
Recipient		_			
Subject	Alarm Notifications	_			
Content	Device: \$(DeviceName) Trigger: \$(TriggerType) Time: \$(EventTime)	•			
				Add Cancel	

Send mobile notification, by default, pushes instant alarm contents to the iViewer mobile app on the smartphones of users. Meanwhile, the User-defined roles option is available (only on VSS Pro) for choosing a set of roles and saving the set as a role profile. So, it is easier to assign a user to a user-defined role.

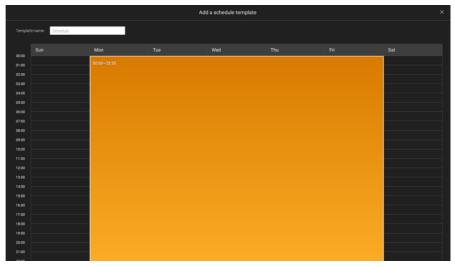


In addition, the administrator can click Settings > Device > External devices > Mobile device to query which mobile devices are using iViewer to log in VSS and to turn on (default) or turn off sending the push notification to a user's mobile device (phone).



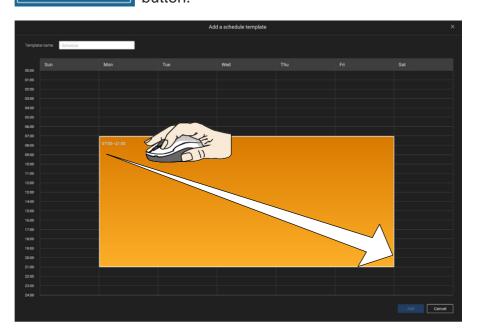
In other words, every user joining the VSS server can receive push alarm notifications by default. Once you remove a user from the notification list here, if this user logs in to VSS again, the user can still get alarm notifications. Therefore, if you must remove the user from the notification list permanently, change the user's password or delete the user account directly.

On the **Schedule** page, you can select to activate or de-activate alarm triggers throughout a specific timeline. For example, in some situations you can disable the alarm triggers during the office hours, and choose to enable the triggers only during the off-office hours.



Click on any of the options on the Schedule panel for the alarm to take effect: Customize, Always, or Add a schedule.

You can manually create a effective time template using the New template Save as a template... button.



Click and hold down on the time cells, and drag the mouse to include the time span of your preference. The minimum selectable unit is half an hour. You can select multiple time spans on the template. Enter a name for the template, and click Add to save your template.

The same configuration window applies to both the Schedule template and the customize schedule windows.

Make sure a Schedule mode is selected when you leave this configuration step.

Enter a name and instructions for users to follow, and then click Add to complete the Alarm setting.

All configured alarms will be listed on the Alarm settings page.

Group Alarm

Multiple triggered alarms can be presented as group alarms. Alarms triggered by the same event type, and by the same camera can be grouped together. In this way, multiple similar alarms can be listed under one entry.

V55 🛲 🔹 🛊	🌲 +				Tital version 1171 34% Min 74% Q III 🖡 🕸 👀 -
rm list/search					
					. Group al
		Trigger source			
 Alarm (Camera 04 - Line crossin) 					
Alarm	VMS_Station	Camera 04 - Line c.	Line crossing detec	2022/12/05 15:40:05	
			Line crossing detec		
					Olicity to accurate the stricture of a stricture of a stricture of the str
					Click to reveal the video viewing panel.
	VMS_Station				
			Line crossing detec		
			Line crossing detec		

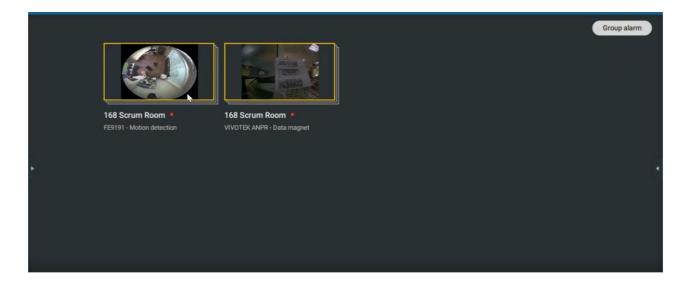
On the alarm list, click the Group alarm button to display the alarm group.

In the list mode, you can expand the right-hand-side panel. The video of the latest alarm will display.

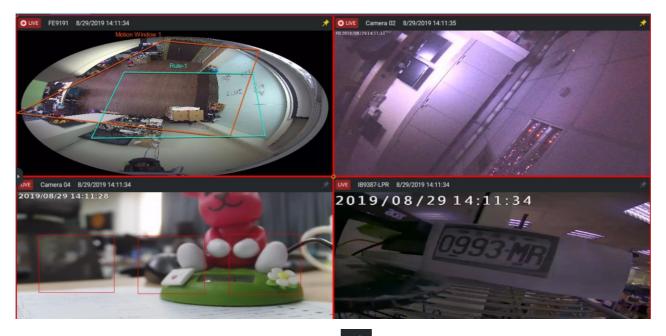
When the alarm-triggered action is configured as a sounded alarm, you can mute all alarms in the group by clicking the alarm sound icon.

	Name	Station	Trigger source
Þ	Alarm (FE9181-H - Motion detection) •		
•	Alarm (FE9181-H - Motion detection) •		
	Alarm	VMS_Station	FE9181-H - Windo
	Alarm	VMS_Station	FE9181-H - Windo
	Alarm	VMS_Station	FE9181-H - Windo
	Alarm	VMS_Station	FE9181-H - Windo

The same applies to the thumbnail view. To leave the group alarm view, click the Group alarm button again.



When the alarm action is set to "Send live streaming," the videos coming from the same camera will occupy only one view cell.



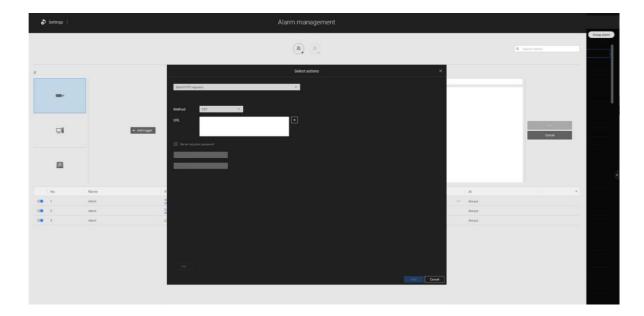
In the Alarm tab window, use the thumbtack *button* to freeze the current screen. If thumbtacked, the other incoming alarms will not affect the current screen.

On arrival, the latest alarm will display with a blinking red frame. A selected view cell will display with a yellow frame.

When configured, the server will send an HTTP request protocol to a 3rd-party device or application. The HTTP request supports GET and POST commands.

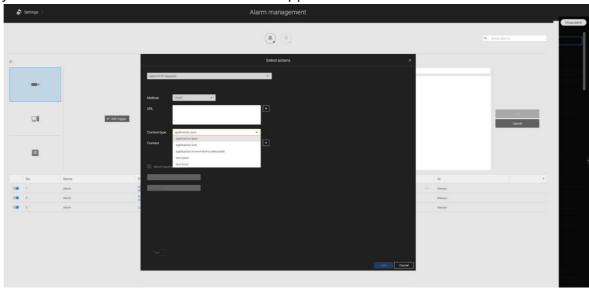
The GET method is to request data from a specified resource.

The POST method is used to send data to a server to create or update a resource.



Below is a screen for setting the GET command. Enter the target resource's URL address.

Below is a screen for setting the POST command. Enter the target resource's URL address, the content, and select the content type. If the need should arise for more content types, you can contact VIVOTEK's technical support.



2-14. E-Map

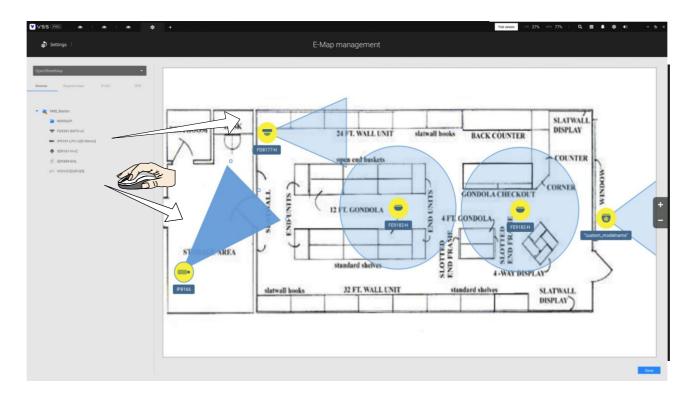
To create your E-Map, click **Settings** 🌣 . Click **Import & Setup**. Click E-Map.



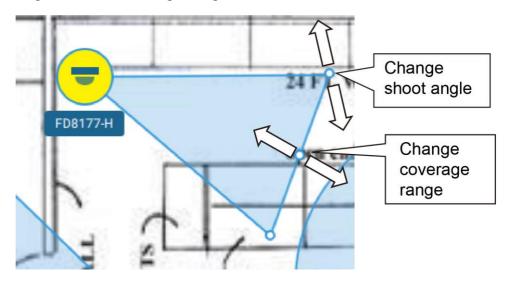
Click Import file up or Import folder . An entire folder can be imported.

When done, double-click on the snapshot of E-Map image to configure the E-Map.

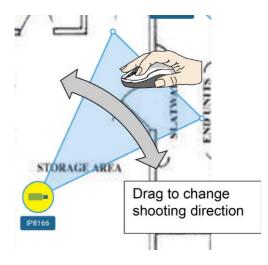
Your cameras will be listed on the left. Drag and drop the cameras to the corresponding locations on the map.



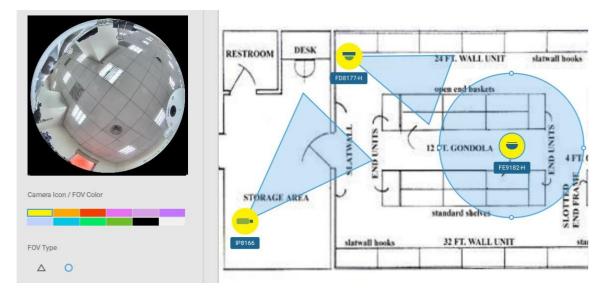
When the camera is in place, drag the FOV indicators on the edge to change the shooting angle and the coverage range.



Drag the FOV to change the shooting direction to match the actual installation.



Click on the camera icon. You can also change the color of camera icon and the FOV type. Fisheye cameras, when ceiling mounted, have a round shape coverage.

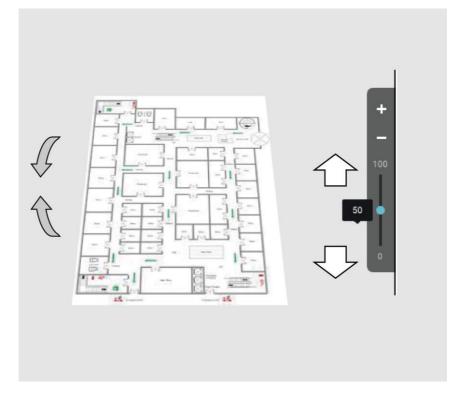


If you have a larger regional map that covers a geographical area, say, a street block, you can drag one or many E-Maps into it. For example, you can place another E-Map that is used to indicate the camera deployment inside a building that is located on the street.



To see live streams from cameras, click on the camera icons in the E-Map.

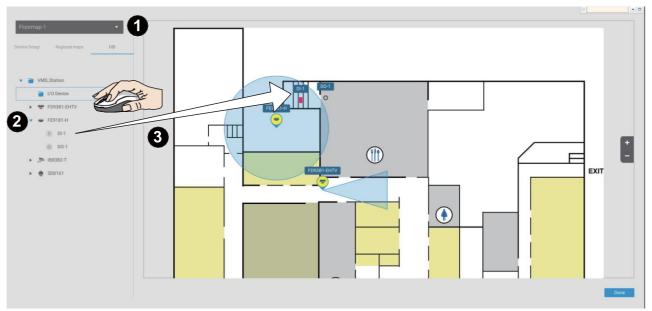
When configuring an E-Map, you can use the tilt bar on the right to tilt the E-Map image. Doing so creates a sense of distance and depth of view.



Placing DI/DO Devices

I/O devices can also be planted into an E-map, such as alarms or various kinds of detectors. The I/O boxes (such as Advantech's Adam series) or the DI/DO connections on an NVR also apply.

- 1. Select a floor map from the pull-down menu.
- 2. Unfold the sub-trees beneath the network camera, (taking camera DI/DO devices as an example).
- 3. Select a DI/DO device. Click and drag to a preferred location on the map.



- 4. When a DI/DO device is selected, you can select the display colors of its icons. Configure different colors for the device status when it is normal or triggered.
- 5. When done with placing all DI/DO devices, click the Done button on the lower right of the configuration screen.



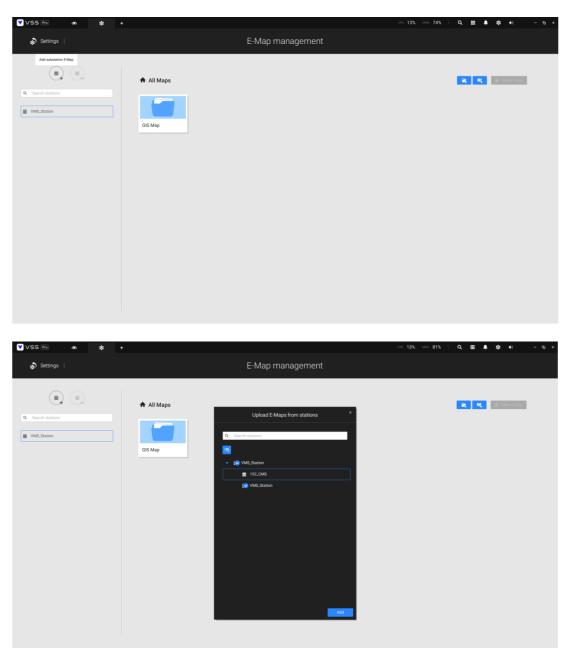
Uploading Substation E-map to CMS

This feature allows users to manually transfer E-Maps created on substations to CMS, saving time on redundant E-Map creation. Here are the operational steps:

- 1. Navigate to Settings -> E-Map.
- 2. Select "Add Substation E-Map."
- 3. Choose the specific substation E-Map you want to upload.
- 4. Once uploaded, the Substation E-Map becomes accessible in the E-Map function.

Notes:

- 1. Uploaded substation E-Maps do not automatically sync. If there are updates in the substation E-Map, a re-upload is required from CMS.
- 2. Editing the content of substation E-Maps is not allowed on CMS. Updates must be made on the substation itself, followed by a re-upload to CMS.



Configuring GIS or Google Maps and GPS

Since Google Maps changed its access policy, using the Google Maps feature requires a user to enter a billing API key. Using Maps, Routes, and Places APIs requires an API key.

For applying a Google API key, https://cloud.google.com/maps-platform/maps/

Visit Settings > E-map > All Maps.

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🔊 Settings	E-Map management	
Sectory Sectory Sectory Sectory Sectory Sectory Boold Max SECO Boold Max Second Boold Max Second <t< td=""><td>E-Map management</td><td></td></t<>	E-Map management	
		Done

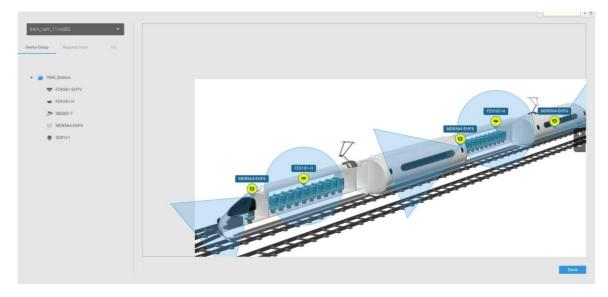
Enter the Google API key you previously registered (if using Google Map).

		Google Map Settings	×
Google Map API Key			
<u>Get a Google Map API key</u>			
Map update frequency			
1 sec	-		

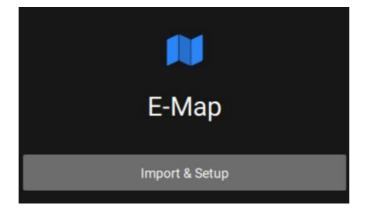
NOTE: In this revision, Google Maps only supports installation on GPS-enabled vehicles. Placing cameras in a static location on Google Maps is currently not supported.

Before configuration on a Google Map, you should prepare an E-map drawing for special installations, such as that on a vehicle. The vehicle, e.g., a train, should come with a GPS-GSM/GPRS module to collect the position information and pass this information to a webserver. As new data is constantly inserted into the database, the VSS server will update the location information containing coordinates, speed, distance, time, etc., and when video recording is required, the location information and time tags will be available.

This applies to a mobile NVR that comes with GPS functionality.



Open the E-Map Import & Setup window.



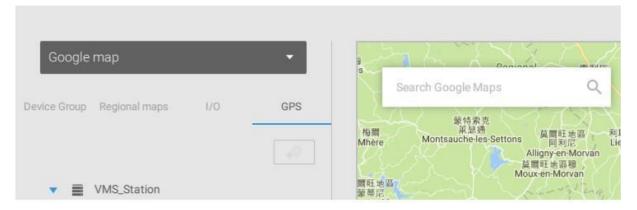
Click to enter the GIS (Geographic Information System) Map and then Google Map window.



Click on either the Google map or the OpenStreetMap.

ی (SS کر ک	\$ +	
🔊 Settings		
	↑ All Maps > GIS Map	
	G	0
	Google map	OpenStreetMap

Click on the GPS tab. Select a VMS station or mobile NVR to apply the configuration, and then select the GPS Add button.

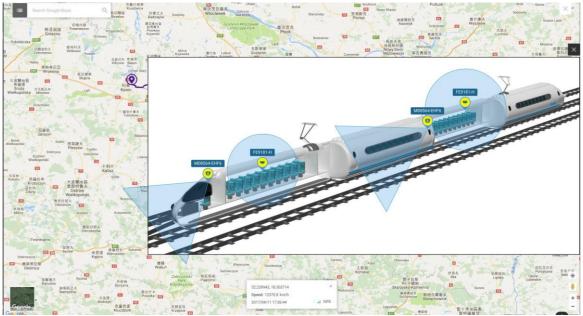


Enter a name for the GPS/GNSS server on the vehicle, its IP address, and server port number. You can select an E-map that will display when you click on the GPS location icon. Select the checkbox and an E-Map that corresponds to the deployment on the vehicle. When done, click the Apply button.

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VMS_Station		名里昂 orient 瓦納
GPS		° Vannes EGO 聖納澤爾
127.0.0.1	: 2222	Saint Nazaire
Show e-maps while selection map	ing GPS on google	型熱昂德波特。 Saint-Jean-de-Monts La
train_cart_11-noBG		
The Appl	y Concel	

You can skip this setting for the mobile NVR that comes with a built-in GPS module.

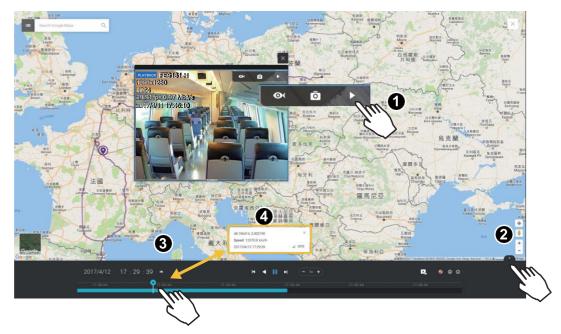
You can click on the location icon v to bring up the E-Map. The coordinates, speed, and time information are also displayed on the map.



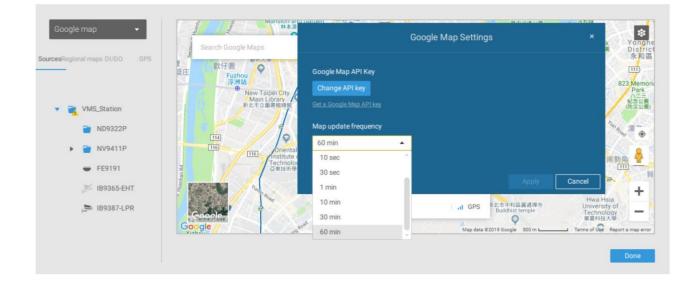
You can click on any cameras on the E-map to search through past recordings. One click displays the live view. A live stream window will display.

To search and review recordings when an event occurs,

- 1. Click on the Playback button.
- 2. Click the Pane button to display the Playback control panel.
- 3. To search for the video of past events, pull the Playhead to a point in time on the timeline.
- 4. The GPS coordinates and time will change to those corresponding to the time you selected. You can then acquire the corresponding location information while tracing the occurrence of an event.



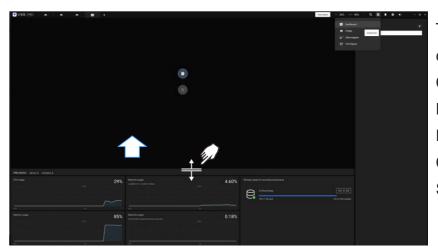
Click on the Setting button on the map to bring up the Map update frequency option. Your GPS target may travel to the outside of the map through time without the map being updated. The map will update by the interval you configure here.



2-15. Dashboard

Select to open the Dashboard utility from the tool bar. The Dashboard displays the system resources of a CMS server along with those of its sub-stations. This provides a glimpse of the load on machines when performing the recording and monitoring tasks.

Mouse over the edge of the bottom row to reveal the expansion mark. Pull the status row up to display the system resource statuses.



The possible system abnormalities can be: CPU utilization over 90% Memory usage over 90% Network usage over 90% Camera disconnected Station disconnected

If you have multiple LAN cards or virtual HBAs, the status row can be pulled to reveal all of their statuses.

The "Storage Usage for Recording and Backup" panel displays information for each recording group, showing the total recorded days and estimated remaining recording days based on current storage capacity. It also provides details about storage volumes, indicating their capacity and usage size.

Notifications appear on the dashboard's status panel if a storage volume goes down or disconnects or the sum of estimated remaining recording days and recorded days falls below the user-defined retention days in the Recycle Option.

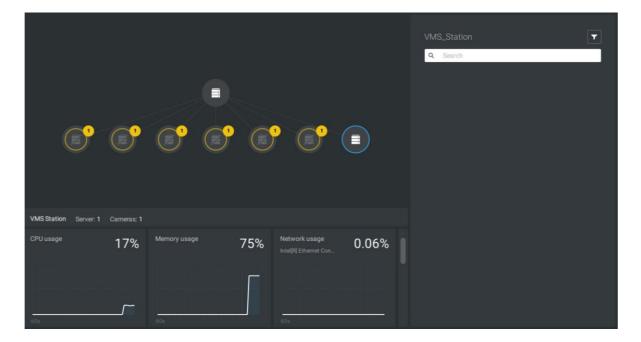
Note: The estimated remaining recording days are a rough reference calculated from the previous day's usage. Due to daily variations in recording content and camera configurations, consider it an approximation.

VSS Pro 💿 🛛	\$ 🕶 +			CPU 25% MEM 7	74% Q 🏭 🌲 🏟	40 - № ×
					VMS.Station 3 free Control disconnected Statistic: 192_CM3 / Control disconnected Statistic: 192_CM3 / Control disconnected Statistic: VMS.Statistor / Control disconnected Statistic: VMS.Statistor / Accive Existe	2024/02/20 09:50:46 1-EHTV4/2
VMS_Station Server: 3 Cameras: 31						
CPU usage	22%	Network usage wiel@fWFF6EAX211160A46				
60s		6da	00 78.37 GB Used	116.94 GB Available		
Menoy usage	74% 100%	Network usage Bestink PCIs GBE Family Controller	0.10%			
CMS Server: 2 Cameras: 5						
CPU usage		10% Network usage Intel[9] Ethernet Connection [7] 1219-LM	0.83%	824.94	cordings GB used	929.77 GB 104.83 GB free
60=		01 601	01	D:\Bar	ckup mage volume is missing	
Memory usage		30% 005 05				

If you have multiple sub-stations, single-click to select and reveal their individual status, including CPU usage, memory usage, network usage, and storage usage.

		VMS_Station 6 Errors Q Search	~		
				Station disconnected	
		1 1		Station disconnected	
				Station disconnected	
				Station disconnected Brant heartbeat	
VMS Station Server: 8 Cameras: 2				Station disconnected	
CPU usage 23%	^{Aemory usage} 61%	Network usage Intel[R] Dual Band Wi	1.03%	Station disconnected ND8321	
60s		60s			

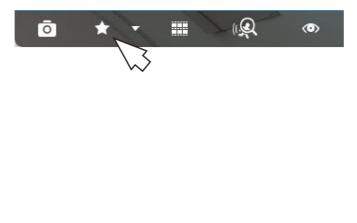
Note that VSS servers of the earlier revisions and NVRs running older firmware do not deliver their statuses to your Dashboard.

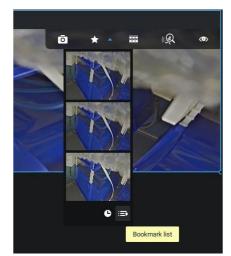


2-16. Search Panel

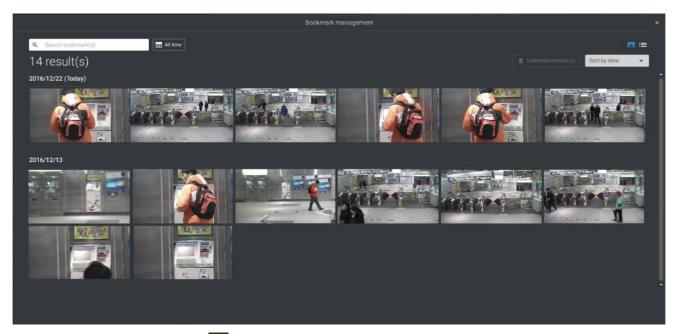
The Search panel is accessed via the Search subtraction. 4 key functions are provided: Bookmark search, Deep Search, Event search, and Smart search.

1. Search by Bookmark: Bookmarks are manually created when users review recorded videos in the Playback mode. Each bookmark comes as a 10-second video clip.





In the Bookmark search panel,

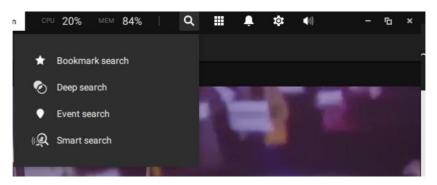


Click the Bookmark search to button. The Bookmark Management window will prompt. All existing bookmarks will be listed with thumbnails.

- a. On this window, you can specify a range of time during which the video streams were recorded and its points in time when bookmarked.
- b. You can then click on a bookmark to display the short video clip extracted from within the recorded video. The default is 10 seconds.
- c. To remove an existing bookmark, left-click to select an entry, and then click the Delete bookmark(s) button. Bookmarks will be indicated as "Invalid" if the videos where the bookmarks were appended were erased, e.g., when the original recording was erased by cyclic recording.
- d. Currently you can search for bookmarks using the name of the camera.
- e. You can also select the display types for the bookmark search in either the thumbnails or list mode.

2-17. Event Search

The Event Search window is accessed from the top toolbar.



Below is the comparison between the Alarm list and the Event search windows:

Alarm List	Event Search
Reports alarms triggered by user- configurable events, such as DI/DOs, Motion Detection, tampering, VCA analytics, cybersecurity, and so on.	The events on the Event Search window require no user configurations. The Event Search window displays system events and provides a glimpse of all general events.
	The event types include: General events, Video Content Analysis events, and Trend Micro IoT Security events.

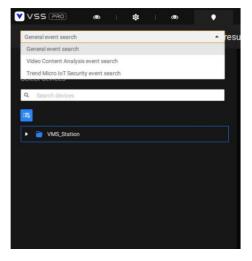
The sample screen for VCA-related events is shown below:

¥V55 ∞ @ \$. @ +					Trial version UPU 32% VEW 83% Q	II 🖡 🕸 📢 👘 –
Video Content Analysis event search 🔹 🕹 resu	ılts					= = I 🗹
	ND9542P	Comera 04	Intrusion detection	2022/12/02 15:09:27	Rule-1, Type=People entering the field	
Q. Starch devices	ND9542P	Camera 04	Intrusion detection	2022/12/02 15:08:09	Rule-1, Type=People entering the field	
	ND9542P	Camera 04	Intrusion detection	2022/12/02 15:08:07	Rule 1, Type=People entering the field	
VMS_Station	ND9542P	Camera 04	Intrusion detection	2022/12/02 15:08:03	Rule 1, Type=People entering the field	
• • • • • • • • • • • • • • • • • • •	ND9542P	Camera 04	Intrusion detection	2022/12/02 15:08:01	Rule 1, Typer People entering the field	
P0101-LPC-v2[9-50mm]	ND9542P	Camera 04	Intrusion detection	2022/12/02 15:05:29	Rule 1, Type=Poople entering the field	
■ Sp9161+++v2	ND9542P	Carnera 04	Line crossing detection	2022/12/02 15:00:29	Line crossing detection 01	
• • ND9542P	ND9542P	Camera 04	Intrusion detection	2022/12/02 15:00:28	Rule 1, Type-People entering the field	
	ND9542P	Carmena 04	Line crossing detection	2022/12/02 14:59:54	Line crossing detection 01	
	ND9542P	Carriera 04	Line crossing detection	2022/12/02 14:58:59	Line crossing detection 01	
	ND9542P	Camera 04	Line crossing detection	2022/12/02 14:58:35	Line crossing detection 01	
	ND9542P	Camera 04	Line crossing detection	2022/12/02 14:58:05	Line crossing detection 01	
	ND9542P	Camera 04	Intrusion detection	2022/12/02 14:57:38	Rule 1, Type-People entering the field	
	ND9542P	Camera 04	Intrusion detection	2022/12/02 14:57:31	Rule 1, Type-People entering the field	
	ND9542P	Camera 04	Line crossing detection	2022/12/02 14:57:18	Line crossing detection 01	
	ND9542P	Camera 04	Intrusion detection	2022/12/02 14:55:05	Rule 1, Type+People entering the field	
	ND9542P	Comera 04	Intrusion detection	2022/12/02 14:54:05	Rule-1, Type+People entering the field	
Last 24 hours	ND9542P	Carnera 04	Intrusion detection	2022/12/02 14:54:02	Rule-1, Type-People entering the field	
	ND9542P	Camera 04	Intrusion detection	2022/12/02 14:53:55	Rule 1, Type=People entering the field	
Event type	ND9542P	Camera 04	Intrusion detection	2022/12/02 14:53:50	Rule 1, Type-People entering the field	
All events *	ND9542P	Camera 04	Intrusion detection	2022/12/02 14:45:37	Rule 1, Type=People entering the field	
	ND9542P	Camera 04	Line crossing detection	2022/12/02 14:32:21	Line crossing detection 01	
Description •	ND9542P	Camera 04	Line crossing detection	2022/12/02 14:31:38	Line crossing detection 01	
	ND9542P	Carnera 04	Line crossing detection	2022/12/02 14:29:53	Line crossing detection 01	
•	ND9542P	Camera 04	Intrusion detection	2022/12/02 14:29:43	Rule 1, Type=People entering the field	
	ND9542P	Camera 04	Line crossing detection	2022/12/02 14:29:28	Line crossing detection 01	
	ND9542P	Camera 04	Intrusion detection	2022/12/02 13:46:42	Rule 1, Type-People entering the field	
	ND9542P	Camera 04	Intrusion detection	2022/12/02 13:44:49	Rule 1, Type=People entering the field	
	ND9542P	Cornera 04	Intrusion detection	2022/12/02 13:32:15	Rule 1, Type=People entering the field	
	ND9542P	Camera 04	Intrusion detection	2022/12/02 13:29:53	Rule 1, Type=Poople entering the field	

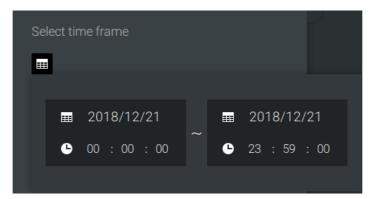
The sample screen for network security-related events is shown below:

VSS 📧 ത 🕴	+								Trial version 251	s === 835 i	۹ 🖬 ۱	• \$ €	- 16 ×	- 6
Trend Micro IoT Security event asarch * 250	ilts											1 0 🗳		
	O Enute fore													
Sauch devices														
VM5_Station	0													
	Quarantin		0				0						12/02	
	Station VMS_Station	Device ND9542P		Time 2022/12/02 1513:21		Rule ID	PeerlPAddress 192.168.51.211:16969	Device/PAddress 192.168.51.108.443	Disginator®Address 192.168.51.211	Direction				
	VMs_station	N09542P	Cyber attack	2022/12/02 151321	Security rule	1133810	192.168.51.211.16966	192.168.51.108.443	192.168.51.211	Inside-out	Victim Victim			
	VMS_Station	N09542P	Cyber attack	2022/12/02 151317	Security rule	1133810	192.168.51.211.16962	192,168,51,108,443	192.168.51.211	Inside-out	Victim			
	VMS_Station	ND9542P	Cyber attack	2022/12/02 15:13:13	Security rule	1133810	192.168.51.211.16960	192.168.51.108.443	192.168.51.211	Inside-out	Victim			
	VMS_Station	ND9542P	Cyber attack		Security rule	1133810	192.168.51.211.16897	192.168.51.108.443		Inside-out				
	VMS_Station	ND9542P	Cyber attack	2022/12/02 15:13:05	Security rule	1133810	192.168.51.211.16937	192.168.51,108:443	192.168.51.211	Inside-out				
nttype events •														
rch criteria														
 Maximum J entima 														
Sec. 1														

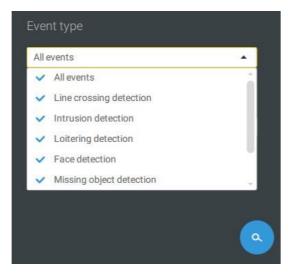
From the Search Event window, you can view and search events by their event types and use the Export \Box button to save a record of these events (in the CSV format).



Use the calendar tool to specify the span of time as the search range.



Use the Event type menu to narrow down the types of events. Select or deselect the event types for search. You may also enter one or several keywords as the search criteria in the following menus.



Click the search button to generate search results.

2-18. Thumbnail search

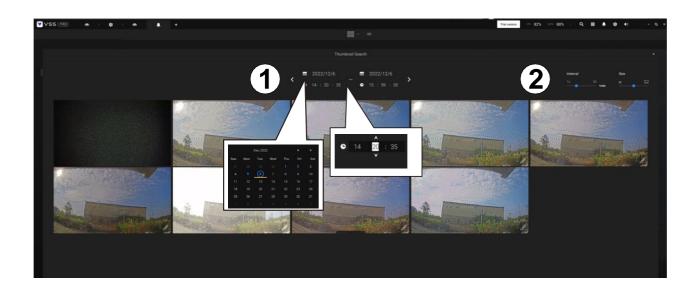
The Thumbnail search function is like doing a post-production editing in film making. Screens from across different time spans are shown to facilitate the search for evidence.

VSS now supports the search for the instances stored on VIVOTEK's Linux-based NVRs.

Click on the Thumbnail search button to enter the Thumbnail search window. The default time span is 100 minutes, starting an hour earlier of the current system time.

To use Thumbnail search,

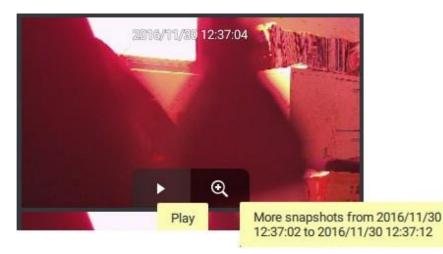
- 1. Use the date and time selectors to specify a time span during which you suspect the event of your interest has occurred.
- 2. If preferred, tune the interval and clip size. The default length for each clip is 10 seconds.
- 3. If you find a clip might contain an event of your interest, you can click to select, and then slide left and right to watch the activities within.



4. Hover your cursor to the lower center of a clip to display the Play and the More snapshots options. If you click More snapshots, another window will prompt to display all frames within the clip.

When you select to display the clip details (specific time span), the time span and the interval information will change accordingly.

When you find an event of your interest, you can play that video clip and use the export function on screen to output the evidence. You may also place a bookmark on the timeline.



2-19. Smart search

The Smart search function enables a quick glimpse of activities that occurred within a user- user-configurable detection area from the recorded videos. **Smart search** is available in both the **Liveview** and **Playback** mode.

Click to select a camera view cell. Click on the Smart search button with the Smart search button window.

There are two Smart Search modes: Smart search II and Smart search I. The Smart search II applies to the recordings of the cameras that come with the Smart Motion, and other VCA capabilities. There are two kinds of metadata polled from camera VCA packages:

1. Motion cell: Pixel-based information. The search results will include all moving objects in the scene.

2. Object information: Human-based information. If People or Vehicle detection is selected, only objects detected as human or vehicle will be displayed as the search results.

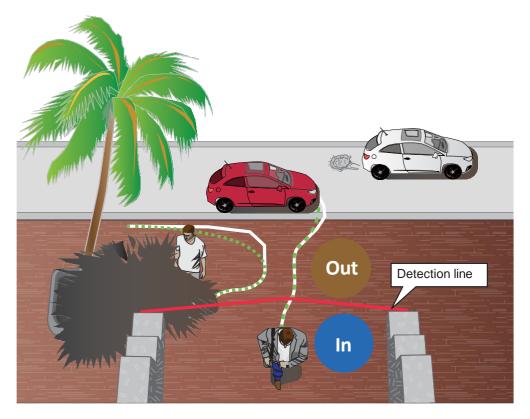
Please refer to VIVOTEK's website pages that are related to the Smart motion and Smart VCA features for the supported cameras.

Note that not all cameras support the latest vehicle detection feature.

Below is a short description for the Line Crossing, Loitering, and Intrusion detection functionality:

Line Crossing Detection

The Line Crossing detection detects one or multiple persons crossing a virtual trip-wire. The traffic direction can be assigned on the screen for persons passing the line in one specific direction or in both directions.

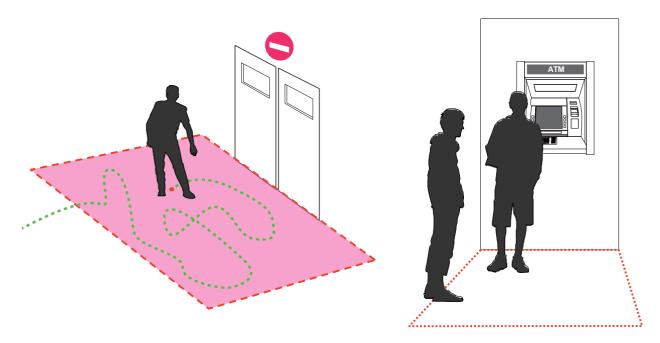


The applicable scenarios of this feature can be:

- * Detects someone who enters a driveway, entrance, or exit through the virtual line.
- * Detects and triggers an alarm in a predetermined direction.
- * The detection line can be used as a fence boundary to know if someone has crossed the articulated line around a perimeter.

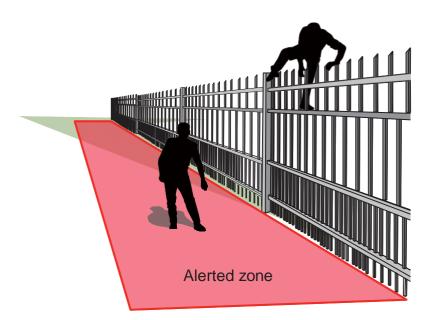
Loitering Detection

The Loitering detection can be used to detect a person or a group of people lingering in an area for longer than a preset time threshold.



Intrusion Detection

VIVOTEK Intrusion Detection can be used to detect people entering or leaving a virtual area in the camera field of view.

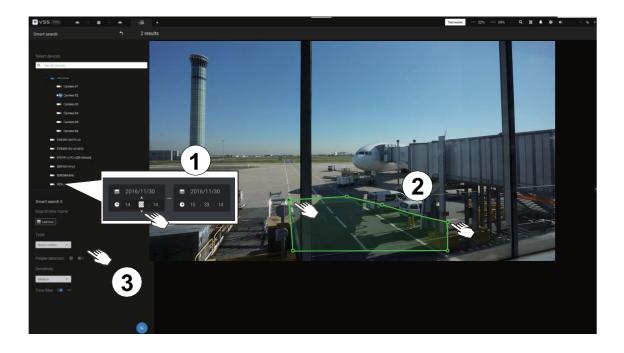


The applicable scenarios of this feature can be:

- * Detects when a person enters a bank vault or school after the office hours.
- * Detects when a person leaves an emergency exit or fire escape, or any place that is normally forbidden from access.

To use Smart search,

- 1. Use the date and time selectors to specify a time span on which to perform the Smart search.
- 2. Select a Type (Smart motion, Line crossing, Loitering, or Intrusion). Selecting Line crossing detection may require you to adjust the position of the detection line.
- 3. There are different parameters for each detection Type. Refer to each VCA feature's documentation for details. You can tune the parameters for each VCA feature. See next page for the configurable parameters.



- 4. You can draw one polygon with multiple mouse clicks to include areas where activities of your interest have occurred. You can draw one or more cross lines for Cross line detection. Double-click to close a polygon.
- 5. Click the Search button.

Search parameters:

Search time frame		tool pane to speci will be searched.	· ·	within which the
Туре	supported types v			detection features, the
Parameters	Smart motion	Line crossing	Loitering	Intrusion
(determined by Type)				
	People detection*	People walking direction	Stay time	Direction: Into the zone / Leaving the zone
	Sensitivity**			
	Time filter			
* People or Vehicle	People or Vehicle of	letection enables th	e display of the ala	arms detected via the
detection	human or vehicle s	ilhouettes algorithm	. This can be used	to filter out video
	analytics alarms that vegetation, or smal		human or vehicle a	activities, such as swaying
** Sensitivity	•	itivity for the detection ivity for long-distance		in a scene. Low for near

Note that different cameras support different VCA functions. Please refer to the documentation for Smart VCA or Smart tracking features, such as the **Smart VCA User Guide**.

IMPORTANT:

Running Smart Search II requires cameras that support the following:

- 1. Smart motion.
- 2. Firmware version above 0113d, 0117b or 0100i (Authwebsocket support is needed)
- 3. VCA package version above 6.1.3a.

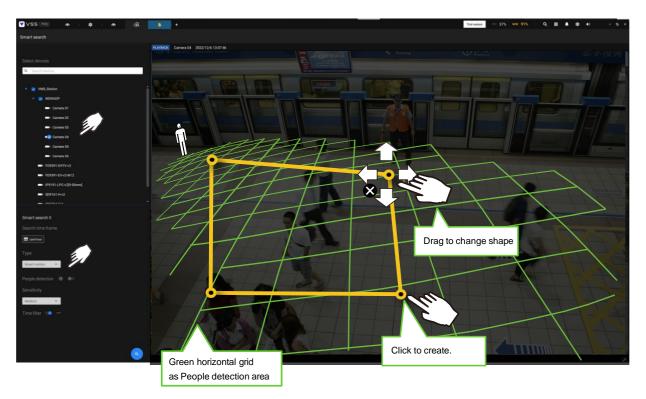
NOTE:

- * Smart search II supports people detection whether the camera comes with a Smart motion license or not. However, the Line crossing, Loitering, Intrusion features will not be available.
- * With a valid VCA package and license, the abovementioned features will be available in the Smart search II.

In most cases, it is presumed that you have configured VCA detection zones and detection rules such as lines to detect people crossing. You can also configure a detection zone or lines on the VSS server and then search for the detection results from the recorded videos.

If your camera supports Smart VCA features, you can manually create detection rules on the configuration screen. Note that you may not need to do this if you have already configured detection rules on the camera.

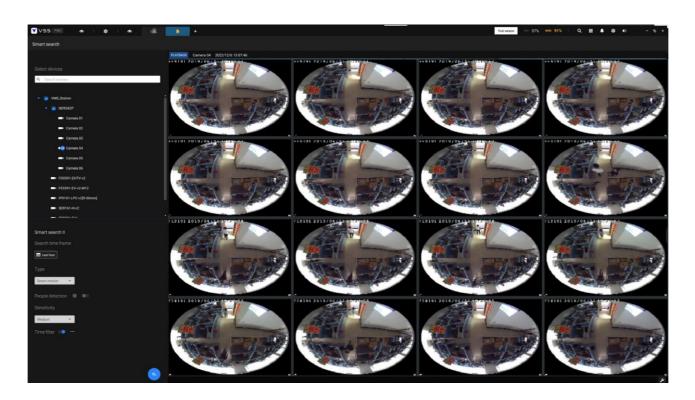
- 1. Select a VCA camera.
- 2. Select a VCA type from the pull-down list: Smart Motion, Line crossing, Loitering, or Intrusion. For a camera that supports only one VCA feature, such as Smart tracking on a speed dome, there is no "type" option.
- 3. You can then draw a detection zone, or detection line on the screen.
- 4. Select a time frame using the calendar tool.
- 5. Select to enable or disable the People detection feature and configure the Time filter, or other parameters.
- 6. Click the **Search (**) button.



4. The search results display as the snapshots of the associated video clips. Click to playback the video clips with activities in the detection zones.

Hover the screen with your mouse, and the length of each video clip is displayed.

Note that unless interrupted, the playback continues with all detection zone clips, by continuing to the successive clips.

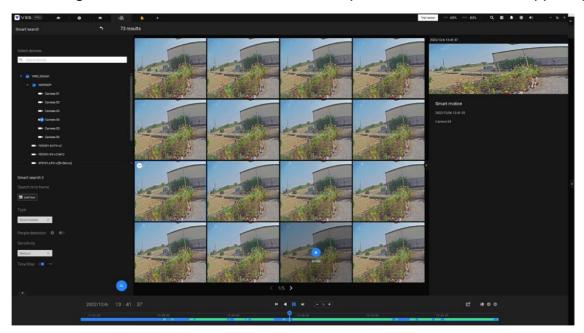


Smart search II is available only for newer line of cameras that come with Smart Motion detection and other Smart VCA features. Smart search II has the following benefits:

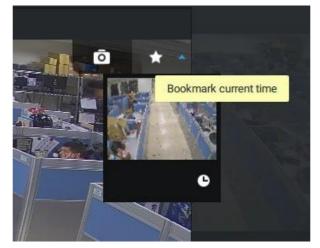
- Faster search: Metadata is saved with videos coming from the cameras running Smart VCA detection. With the help of the metadata, the search focuses on the effective alerted vectors and the adverse effects, e.g., headlights causing dramatic contrast or small animals passing through, have already been eliminated by the camera. The search can be more rapidly completed.
- 2. People detection: The search can be conducted for human activities only. Activities matching the silhouettes of human will be considered as effective results.
- Multiple-point polygon: Users can select a region of interest by drawing a easilyconfigured polygon. In addition to the pre-configured detection rules on VCA cameras, users can create their own Smart VCA Detection rules on the VSS search panel screen.

 ✓ WMS_Station ■ FD9365-HTV ■ FE9391-EV ■ IB9389-EH 	
Human detection 💿 🔹 Sensitivity	
Time filter Minimum activity duration S00 ms Activity merge interval 1500 ms	Search

You can specify the time span, People detection, Sensitivity level, and time filter parameters in a Smart Search II panel. 5. You can then click to open any clip of your interest. Each marked event clip will be indicated by a lighter color on the timeline. Select and double-click on a video clip, and then right-click or select the bookmark or snapshot functions from the upper-right.



Move your cursor to the upper right corner of the playback window to display the Snapshot and Bookmark buttons. Use them to configure the current play time as a bookmark or take a snapshot.



While in the full-screen Playback window, you can right-click to select or deselect the display elements including motion cells, tracking block, and tracking dot.

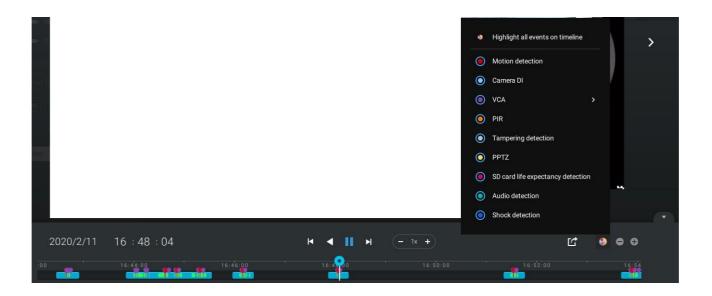
	Bookmark	Ctrl+Shift+B					
	Snapshot	Ctrl+Shift+C					
~	Show motion o	ells					
~	Show tracking	Show tracking block					
~	Show tracking dot						

6. If you find important events, use the Export function to mark the start and end points on the timeline to export a video clip. Use the pull tabs on time line to determine the export length. By default, the export length is 2 minutes long.

The playback control in the Smart search window is identical to that on the Playback window.



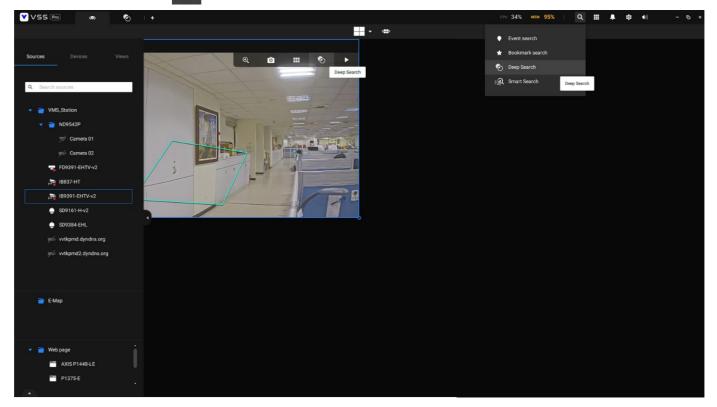
Different events on the timeline are indicated by tags of different colors. Click on the event highlights button to verify their colors.

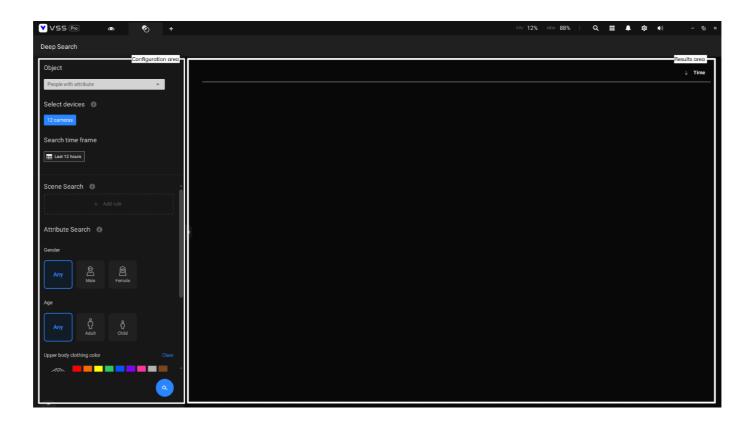


2-20. Deep Search

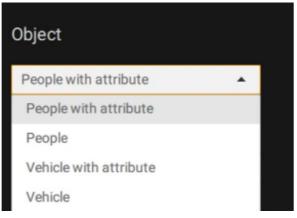
The Deep Search function uses AI empowered by VIVOTEK AI cameras to improve search functionality, and it comprises three main functions: Attribute Search, Scene Search, and Re-Search (VSS Professional edition only). Without relying on scrolling through the video footage frame by frame, VIVOTEK AI cameras provide object-based metadata to enable intelligent video evidence search. By utilizing object-based metadata-defined attributes and rules, Deep Search helps users search for the target of interest smarter and faster.

To use the Deep Search function, make sure you have enabled the Deep Search function, added the cameras that support Deep Search, and have the time synchronizing among the VSS client, VSS server, and cameras. There are two ways to access the Deep Search function; one is to click the search icon and select Deep Search, and the other is to click the associated icon on a live view cell.



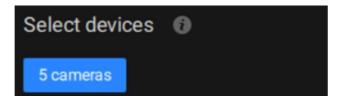


Select the object type in the configuration area, including people, vehicle, people with attribute, and vehicle with attribute. Select people or vehicle objects if you want to search for people or vehicles in the recorded video. Select people with attribute or vehicle with attribute if you want to find people or vehicles and know their appearance.

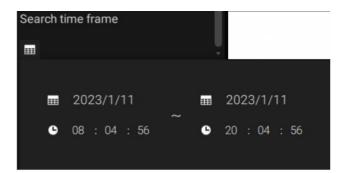


Note that not all cameras support finding all the object types. When users select one type of object, only the supported cameras will appear in the camera list.

By default, all the cameras that support the object type will be selected. Users can click the device list and choose the cameras.



Select a time frame using the pull-down menu.



Select Scene Search or Attribute Search.

Scene Search

Search for the object appearing or lingering in the virtual area or crossing a virtual tripwire. Note that this search can only be used if you select a single camera. Users can click the

Scene Search + A	.dd rule	o select a	search rule ty	De.
	Select a	a rule type		×
Intrusion	Search any object appearing in the virtual area.	Line crossing	Search any object crossing a virt wire.	ual trip-
Loitering	Search any object lingering in one area longer than a period of time.			
			Select	Cancel

- Intrusion: Draw a closed area in which you want to find related people or vehicles staying in this virtual area.
- Line crossing: Move the nodes to draw a tripwire to find related people or vehicles crossing this virtual wire.
- Loitering: Draw a closed area in which you want to find related people or vehicles staying in this virtual area for more than a specified period.

If there are search results after performing Deep Search, you can play each corresponding video thumbnail and take snapshots as needed.

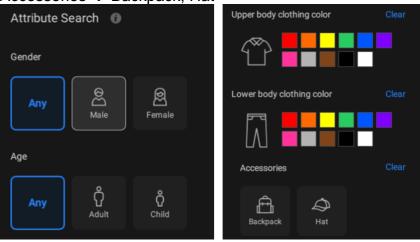
Attribute Search

filter the object with selected appearance. Note that this search is only available when users select the people appearance or vehicle appearance object. The supported appearance for vehicle and people is listed in the table below.

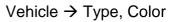
Object Appearance:

• People with Attribute

People \rightarrow Gender, Age, Clothing color Accessories \rightarrow Backpack, Hat



• Vehicle with Attribute





Click the search icon, and the results will display in the results area. The number of results will be shown at the top of the results area. Each result contains a snapshot of the object and a video clip of trajectory for the object, and user can click the video clip to playback the video. Also, users can click the sorting icon on the top-right of the results area to sort the results from the latest to the earliest or vice versa. If there are more than 200 search results, only the latest 200 results will be listed.

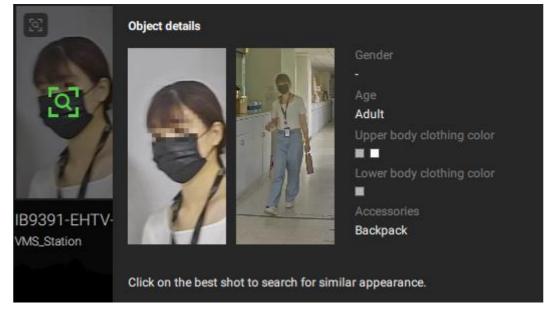
Hence, by default, the first 200 results will be listed if the time is sorted from the latest to the earliest.



The first 200 results will be listed if the time is sorted from the earliest to the latest.



VIVOTEK AI cameras with supported Deep Learning VCA package versions can capture and provide not only body snapshots and metadata but also face snapshots and metadata to VSS. Users can see object details, including snapshots and attributes, by hovering over a snapshot.



Re-Search (VSS Professional edition only)

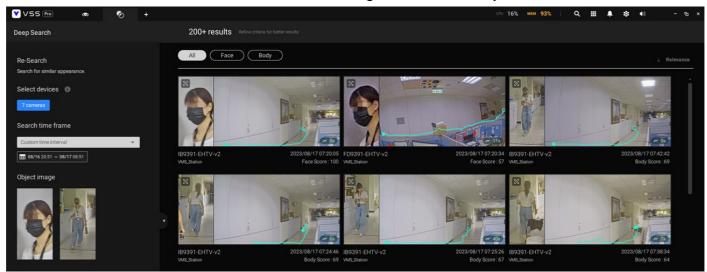
After all the search results shown by the above three filters, users can click the snapshot of the object to search for similar appearance. Users can select to apply Re-Search based on:

• Current selected device and time frame: Click "Search with current settings" to start Re-Search based on the currently selected device and time frame.

or

• Custom settings: Click "Search with custom settings" to start Re-search based on the re-selected device and time frame.

When Re-Searching the face snapshot of an object, the results will show both objects with similar faces and similar bodies in the descending order of similarity.

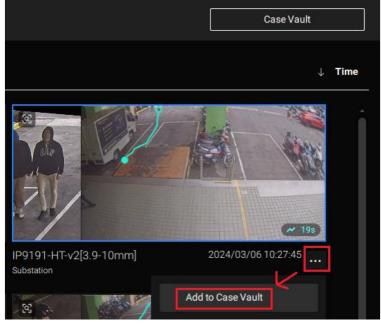


Case Vault (VSS Professional edition only)

The Case Vault function enables users to curate a personalized list of interested objects' video clips discovered through Deep Search. Once added to the Case Vault, the videos are organized chronologically for easy review and report generation.

How to Add Videos to the Case Vault?

Perform a Deep Search or Re-Search to find relevant video clips. In the upper right corner of each video clip, locate the "More" menu. Open the "More" (...) menu. Choose the "Add to Case Vault" option to include the video in the Case Vault list.



Case Vault Functions

1. Quick preview in Case Vault

The added videos will be automatically arranged in the Case Vault based on the time of occurrence. Users can delete unwanted videos. Hover over the video screenshot in the Case Vault to play the video at double speed for quick previews.

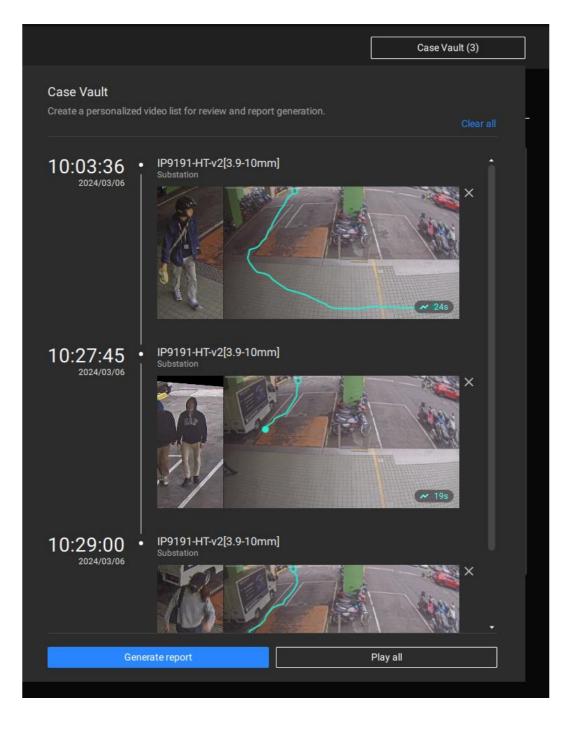
2. Case Vault Playback

Click on the "Play all" button, and Videos will play in a larger screen format, seamlessly transitioning based on their chronological order. On the video playback control bar, click on the "Show related E-Map" icon to view the cameras associated with the currently playing video in their designated positions on the E-Map.

Note: Only one E-Map will be shown if one camera is placed on two E-Maps.

3. Report Generation

Automatically generate a comprehensive report based on the content of the videos in the Case Vault.



After reviewing the videos, click the "Generate report" button in the Case Vault. A report window includes the object's best shots, and video clips from the Case Vault will appear for editing.

In the report's top right corner, click "Export" and choose to export the report as a PDF file or export all videos from the Case Vault.

IMPORTANT:

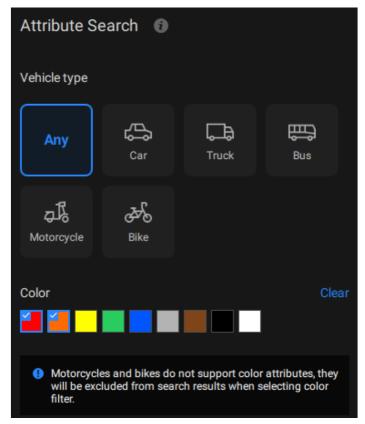
1. Starting from VSS v1.1, the object containing at least one selected color for the clothing or vehicle will be listed in the search results when one or more colors are selected in the clothing or vehicle color option. For full compatibility, it is recommended to upgrade both the client and servers/substations to the latest software/firmware version. For ND series NVR, please upgrade to 4.4 or later.

VSS Pro 💿 🥎 +		CPU 14%	мем 93%	Q	II A	₽	●))	- 6 ×
Deep Search								
Object								↓ Time
People with attribute								
Select devices 0								
12 cameras	Incompatible servers/substations detected. Upgrade to							
Search time frame	the latest software/firmware version to avoid functional irregularities across various features. For example:							
Scene Search 0	 Unable to show object details when hovering over an object image. 							
+ Add rule	 Unable to obtain search results from incompatible servers/substations. 							
Attribute Search	Don't show this message again							
Gender								
Any & @								
Age								

2. When searching for people with accessories, the search results will show people with both backpacks and hats.

Attribute Sea	arch 🔞	Upper/Lower body clothing color When selecting multiple colors, the results will show objects with any of the selected matching colors.		
Any	Ø Male	Accessories When selecting multiple accessories, the results will show objects with all the selected matching accessories.		
Age				
Any	ဂြီ Adult	Ô Child		

3. When searching for motorcycles or bikes, color attributes are not supported.



- 4. For Re-Search, a broader time frame and more selected cameras result in a longer search time. If the VSS server is busy checking and calculating a significant amount of metadata, it may reach a 90-second timeout with no search results. To avoid this scenario, consider shortening the time frame and reducing the selected camera count, and keep in mind that CPU and storage throughput will also influence the search speed.
- 5. The snapshots and metadata of Deep Search are stored in the same path as recordings and recycled based on the recording recycle setting. 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.
- 6.To comply with regional privacy laws, the Deep Search function can be managed by users with an admin account in Settings > Preferences > Station > Deep Search. More details can be found in Chapter 4.
- 7.Please refer to the VIVOTEK'S website and check supported cameras for Deep Search. (<u>https://www.vivotek.com/ai-driven/deep-search-system-requirement</u>)
- 8. With a newly added camera, Deep Search takes 3 to 5 minutes to acquire search data. The searched results will be acquired after another 2 to 3 minutes.

Chapter 3: Applications 3-1. I/O DI/DO Devices

IO Box and Related Configuration

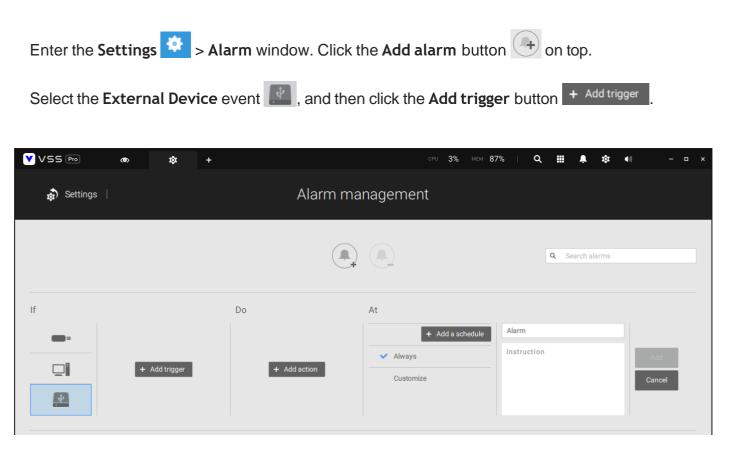
Use the software utility that comes with the IO box, e.g., Advantech's Adam/Apax.NET utility, to configure IP address, and test the DI/DO connectivity. The connections to external devices should be completed before configuration on the software.

Advantech Adam/Apax .NET Utility (Win3	(2) Version 2.05.10			
File Tools Setup Help	-,			
Serial Godd Serial	Setting Network asting: MAC address: IP address: Subnet address: Default gsteway:	00-D0-C9-P0-EF-3B [192.168.6.118 [255.255.0.0 [192.168.6]1	Apply change	
ADAM/APAX				

Enter Settings 🍄 > Device > D	DI/DO Device. Click the add I/O button on top.
💙 VSS Pro 💿 🏚 +	CPU 4% MEM 88% 🔍 🏭 🌲 🏘 📢
🔊 Settings	Device management
Cameras Cameras Stations Cameras Stations Cameras C	Add DI/DD device Device name Brand Advantech IP User name IP So2
External devices	DI number: 0 D0 number: 2 D0-1 D0-2 Add Cancel

Enter the I/O box's IP address and credentials, and select the correct model name from the pull-down list on the right. Click the Apply button to proceed. The current I/O connections are also displayed on screen, such that the status is displayed when DI pins are connected to detection devices.

Configuring I/O Box DI/ DO as a Trigger or Action in Alarm

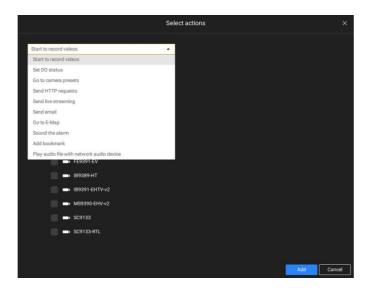


The Select trigger and source window will prompt.

Select either the I/O Box DI or DO as the triggering source.

Select one or multiple DIs as the triggering source and click the **Apply** button.

Click Add action + Add action, and select a corresponding action, such as sending live streaming, record videos, trigger a DO, sending an HTTP request, or sending an Email. When done, click the Add button.



Configure a schedule during which the Alarm configuration will take effect. If no special time span is needed, you can simply select Always.

			Add a	schedule template		
emplate	name Schedule					
:00	Sun	Mon	Tue	Wed	Thu	Sat
1:00						
:00						
:00						
:00						
:00						
:00		05:00~20:00				
:00		00.00 20.00				
.00		_				
:00						
:00		_				
:00		-				
:00		_				
:00		-				
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:00						
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:00		1				
:00						
:00:						
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Enter a name for your Alarm, and add description for your configuration, e.g., "intrusion detected on the front door." When done, click the **Add** button. The Alarm configuration takes effect immediately.

V55 Pro 💿 🏚 +			Trial version CPU 1% MEM 85% Q	. Ⅲ ♣ 1\$1 • - % ×
🔊 Settings		Alarm management		
				Q Search alarms
₩ 	Do # trigger + Add action	At Abways Customize	a schedule Alarm Instruction	Zddi Cancel
1	Alarm	ADAM I/	O Box DI	Send live streaming

NOTE:

If an I/O module is started later than the VSS server, you may not be able to access the I/O module. You should then re-start the VSS service.

3-2. Configuring Redundant Servers - Failover

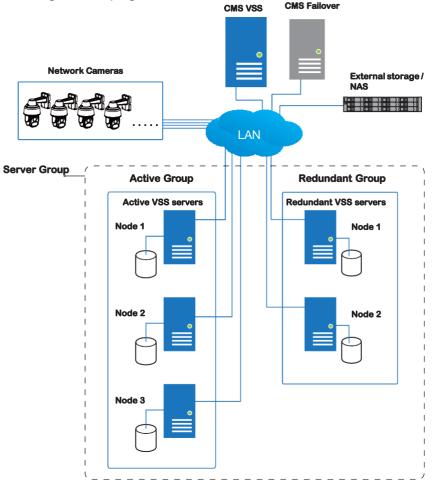
VSS servers can be configured into two groups: Active and Redundant. The Active group performs daily recording and monitoring tasks, while the Redundant group acts as the standby servers. In the event of server failures, the Redundant group becomes active, and takes over the recording task.

The Redundant server group configuration consists of the following:

- 1. One VSS server designated as the **CMS** (Central Management server) VSS central management server. Another VSS server can serve as a CMS failover server.
- 2. At least one VSS server in the Active group.
- 3. At least one VSS server in the Redundant group.
- 4. Gb/s network or higher-speed connections among the servers. All Active and Redundant groups can reside in different subnets, provided that static IPs are configured for these servers.

IMPORTANT:

For a Redundant server configuration, you must first enlist VSS servers in the **Stations** configuration page before configuring the Redundant server groups. See the **Stations** configuration page.



Below are the definitions of server roles:

1. **CMS** VSS server: The main access portal for the configuration.

1-1.	The CMS server is where the Failover configuration takes place.
1-2.	CMS continuously polls to check the heartbeats to monitor the statuses of
	all
	Active and Redundant servers.
1-3.	CMS backs up the configurations on active servers twice per day (8:00 am and 20:00 pm). Suggest manually applying the configuration while the license of active servers changes to prevent unexpected incidents occurring before daily backup.
1-4.	CMS assigns redundant server(s) to take over a failed Active server.
1-5.	In a Redundant server configuration, the CMS is supposed to be up and running at all times. If the CMS server fails, the server failover and failback operation will not take place. It is, therefore, preferable to configure a CMS redundant server and install the CMS server in a high up-time environment, such as on a VMWare configuration.

2. **CMS Redundant** server: This is a failover server that serves as the backup for the CMS server.

Note that this redundant server is configured in **Settings** > **Device** > **Stations**. Click **Add Stations**, and select "**Add as a redundant server for**" "**CMS**." See the next section for the configuration procedure.

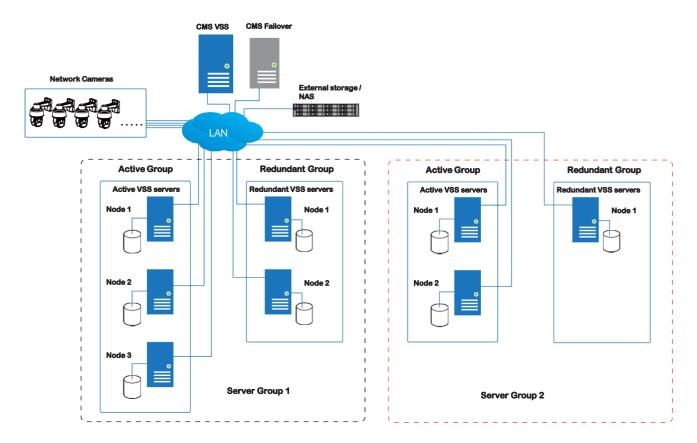
VSS Pro	on \$ +	Trial version CPU 30% MEM 78% Q III 🖡 🕸 📢 -	∿⊡ ×
🔊 Settings		Device management	
Cameras Stations J/O DI/DO devices 2iii. Data magnet External devices	Image: Control of the second devices Image: Control of the second devices Image: Control of the second devices	Add new substations IP/Domain name Port 3443 SL only CMS password CMS as a redundant server for CMS Substations Windows account in substation (optional) Heit Jearname Pasword	×

- 3. Active servers: Active VSS servers are the work horses that perform recording and monitoring tasks.
- 4. **Redundant** servers: The Redundant servers are actually active-standbys. They participate to continue video recording in the event of active server failures. It is recommended for the Redundant servers to have an equivalent or higher processing power than the Active servers. The same applies to the size of storage volumes and the disk drives' write performance.

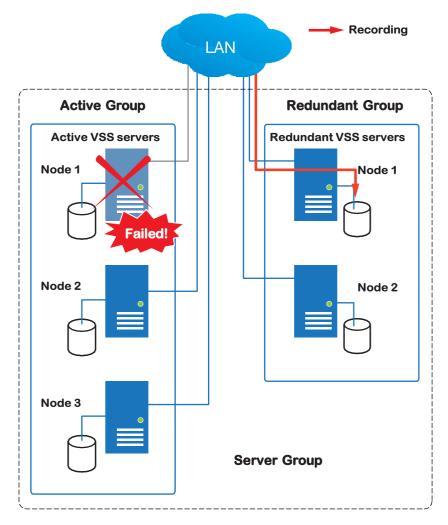
Note that you cannot configure a Redundant server by opening a local console.

The conditions during the failover process are illustrated below:

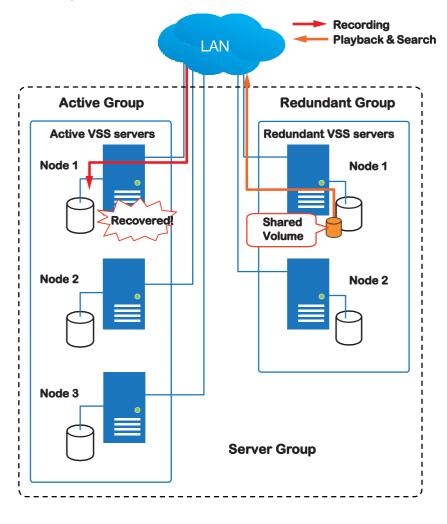
Multiple Active and Redundant groups can be created.



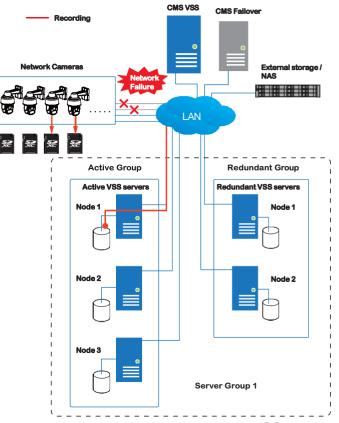
Each Redundant server can serve as the backup for ONE Active server. Depending on the number of the Active and Redundant servers, if the number of failed servers exceeds the number of Redundant servers, the failover will be abandoned. For example, if 2 Active servers failed, and there is only 1 Redundant server available, the second Active server that failed will be abandoned. In the event of a server failover, a VSS server in the Redundant group takes over the recording task. Note that depending on the network environment, the takeover can take up to 5 minutes.



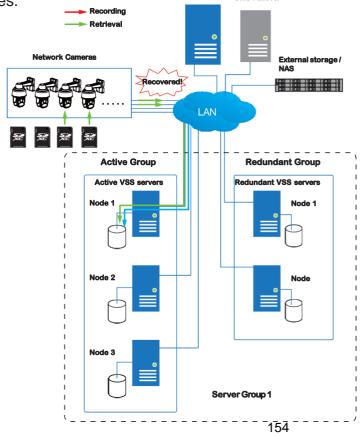
Once the server in the Active group is restored to normal operation, and a CMS server request for the recordings and data occurred during the time the active server failed, the requests will be fulfilled by a shared volume on the redundant server. Due to the concerns with network bandwidth and processing power, the restored active server does not synchronize its recording pool with that on the redundant server after the failover and failback process.



In terms of network failure, the VSS configuration supports Seamless Recording. For cameras equipped with an SD card, video is recorded to the SD cards in the event of network failure. Of course, the cameras must have a backup power source, such as a DC 12V input. In cases such as the only PoE switch or PoE mid-span fails, power is lost.



Once the network connection is restored, the VSS servers resume the recording task and also retrieve video segments from the SD cards. The video segments recorded during the network failure will be stitched up with those occurred before and after the network failure. The retrieval speed varies depending on the available network bandwidth and CPU resources.



Failover Configuration Process

Before Failover configuration, you need to add other servers to your Failover configuration. Below is a screen from the Stations management window.

- If you are adding a Redundant server, select the "Add as a redundant server" checkbox, for either a CMS server or VSS Substations.
- If you are adding a server without selecting this checkbox, it will be considered as an **Active** server.
- When adding a Redundant server, you can provide a Windows account 802.1x domain user name and password. A Redundant server requires this because a full access to the recorded data is required during the failover and failback process.

VSS Pro	∞ \$\$ +	Trial version : CPU 30% . MEM :78% Q III 🖡 🎝 🐗 🐠 -	∿n ⊳
🔊 Settings		Device management	
Cameras Cameras J/O DI/DO devices DI/DO devices Data magnet External devices	 e search devices f VMS_Station 	Add new substations IP/Domain name Port 3443 CMS password Vindows account in substation (optional) Mat Jeasword Jeasword Password	×

When the "Add as a redundant server" checkbox is selected, enter the name of your Windows domain and the user credentials for a full access to the Redundant server.

Device management Add new substations IP/Domain name Port 343 St. only CMS password Image: Constant in substation (optional) Image: Constant in substation (optional)		
Add new substations Search		
IP/Domain name		
Port 3443 SSL only		
CMS password		
Add as a redundant server for CMS O Substations		
Windows account in substation (optional)		
Host		
User name		
Password		
Add Cancel		

Note that it is a must for the Redundant server to be installed differently by selecting a "**Redundant server**" checkbox during the installation process.

VAST Security Station	_		×
Select a server			
 Standard server The 60-day trial starts automatically when the installation of the formation of the licent of the li			
○ Redundant server			
< Back	Next >	Can	icel

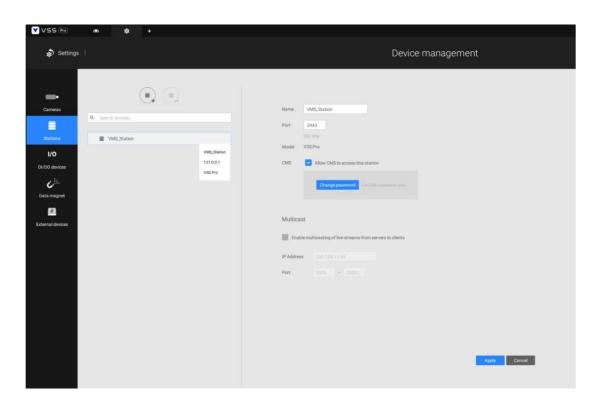
When a Redundant server is successfully added, the server will be listed under your VMS station.

Search devices	Name VMS_Station_R Disable this redundant server.	
 WMS_Station VMS_Station_R 	Windows account (optional) VIVOTEK	Ð
	eric.lu	
	_	

A Redundant server comes with an associated icon, To.

An Active server must have a CMS password configured for the hierarchical configuration.

Note that on the **Active servers**, you should configure them as the subordinates to your CMS VSS server. On a web console to these servers, open the Station management page, and select "**Allow CMS to access this station**." Create a common password for the CMS hierarchy.



Two agents will be running on the Active and Redundant servers, "stunnel" and

"VMSWebServer." Make sure they are not blocked out by your firewall. These agents can be

found in the default folders below:

C:\Program Files (x86)\VIVOTEK Inc\sTunnel\stunnel.exe C:\Program Files (x86)\VIVOTEK Inc\VAST\Server\VMSWebServer.exe

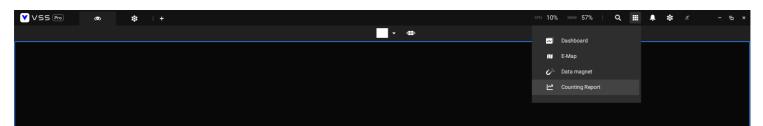
Allowed apps							א ים ק		
						Search Control Panel			
Edit View Tools									
	AU								
	Allow apps to communicate through Windows Firew								
	To add, change, or remove allowed apps and ports, click Change set	-							
	What are the risks of allowing an app to communicate?	- Ch	a <u>ng</u> e settings						
	Allowed apps and features:								
	Name	Private	Public ^						
	SHIELD Streaming NvStreamer TCP Exception	\checkmark							
	SHIELD Streaming NvStreamer UDP Exception								
	SHIELD Streaming SSAS UDP Exception								
	SHIELD Streaming SSAU UDP Exception	V							
	SmartScreen								
	SNMP Trap								
	Ssh Server								
	Store Store	\checkmark							
	Store Purchase App	V							
	stunnel - TLS offloading and load-balancing proxy								
	SXUPTP	V							
	Take a Test	×	✓						
		Details	Remove						
		Allow ar	nother app						
		ОК	Canad						
		UK	Cancel						

Click on the Add button to create a Redundant server group. The Active and Redundant servers you enlisted on the Stations page should all be listed below. Select the members of the Redundant group, and click Add to complete.

The default for the network disconnection timeout is 30 seconds. It is not recommended to configure a very short timeout, e.g., 5 seconds, because if doing so, a temporary network disorder can make servers consider the Active server(s) have failed.

C Search groups	Group name Failover group Description			
	Active servers	Rec	dundant servers	
	Q Search servers	Show selected devices	Q Search servers	Show selected devices
	Active server 1		Redundant server	0
	Active server 3			
	Back up data after network is disconnected for 30	seconds. (5~3600)		Add Cancel

3-3. Counting Report



The Counting Report utility is started from the tool bar on top. The Counting Report utility provides comprehensive graphs and line charts for quick access to the data collected through VIVOTEK's People Counting modules, such as the SC8131 stereo camera. Statistical results is refreshed by hour or minutes, and you can compare the results acquired through different time periods or among different surveillance areas. These data help figuring the customer flow in retails so that shop owners can optimize the arrangement of store layout, or mange queues more efficiently.

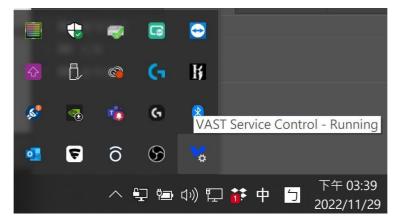
Note that the configuration of detection methods in People Counting still occurs on a web console to individual cameras. It is not configurable through the VSS LiveClient.

Prerequisites:

The prerequisites for using the Counting Report are:

1. The monitoring server running the Counting Report utility must be up and running during the time the counting VCA is taking place. If you power off the server, the counting metadata generated during the server down time will not be available for analysis.

The VSS server instance runs in the background. The VSS management console does not need to be started during the Counting Report data collection process.

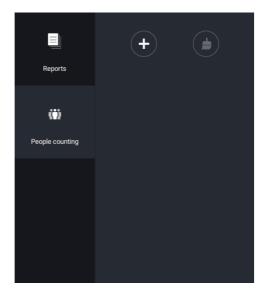


2. Cameras running the VCA utilities have been configured and added into the VSS deployment. The instances of available VCA rules will be listed in the Area panel.

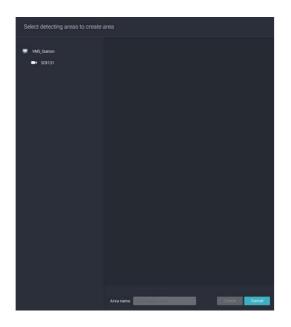
- 3. The life expectancy of VCA records is 5 years.
- 4. Currently the utility supports Windows XP, 7, 8, and 10.
- 5. The latest revision VSS supports Seamless Recording, in order to retrieve collected data and recording during Ethernet disconnection. Provided that an SD card is installed on the VCA-enabled cameras, the VSS station gradually retrieves data from the SD card after the connection is restored.

To start Counting Report:

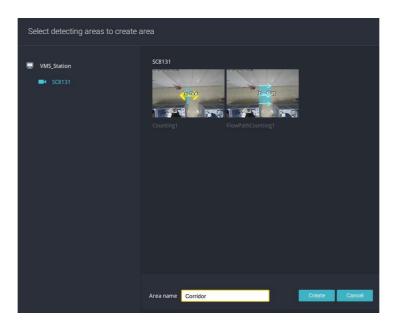
- 1. Click on Counting Report 🖾 button on the tool bar.
- 2. Select People Counting.
- 3. Click on the Add area 🛨 button.



4. Select a camera that is VCA-enabled, and then click the Create button.

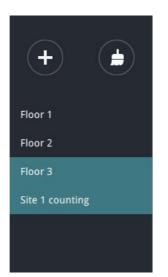


5. The pre-configured counting rules (areas) will automatically display. Select a counting rule and enter a name for the area. When done, click the Create button.



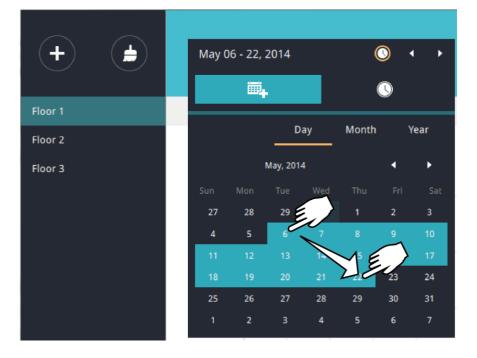
If only one camera is selected, its name will apply as the Area name. If not, enter a name for the area.

6. Click to select one or multiple areas. Those selected will be highlighted in a different color.



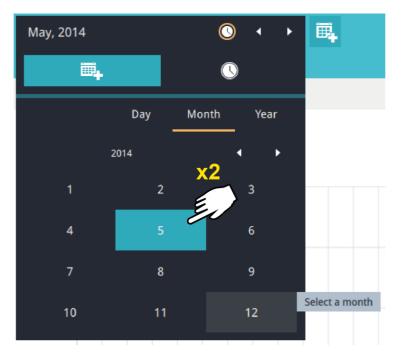
7. Select Date & Time

- 7-1. By default, the time displayed on the calendar is the current system time on the client computer running the utility. Select from the **Date** selector on top.
- 7-2. Select a date or span of time from the calendar or use the **Time** selector to select a span of time.
- > Single-click to select a date or click and drag to select multiple dates.
- > You can select a month or a year using a single click. If you select a month, the timeline unit will be days within the month. If you select a year, the timeline units will be the months in a year.
- In the Month or Year panel, single click to select the entire month or an entire year. Double-click to select sub-units, e.g., days within a month. If you double-click on a Month panel, you will enter the Day panel.



You can select a different month in the **Month** or **Year** panels. The **Calendar** panel disappears if left unattended for 2 seconds.

On a **Month** panel, double-click to select a month, and the **Day** panel for that particular month will display.

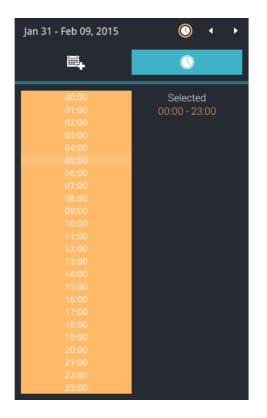


Note the following when making the configuration:

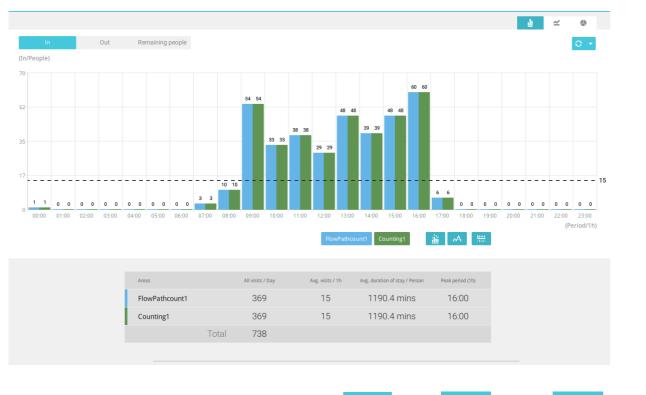
- When a date is selected, the Date and Time panel will not automatically close, and the configuration changes will not take effect until it is closed. You can click on the outside of the panel to leave the panel.
- You can select multiple days to form a span of time. Select one date with a single click and select multiple dates by dragging your cursor across the screen to an end date you prefer.
- To select a year, click to open the **Year** panel. Single click to select a year. Multiple years can be selected using the click and drag method.

7-3. Select the hours to be included in the statistical poll using multiple clicks on the chart.

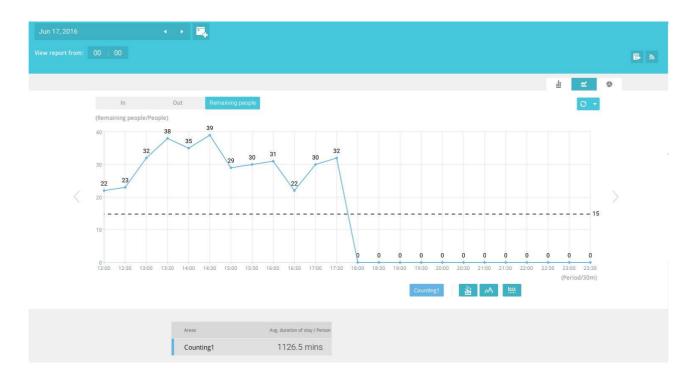
Single-click to select an hour or click and drag to select multiple hours.



Note that you can only compare the counting results from two spans of time if you select only one Area. If you selected multiple Areas, you cannot compare the results from multiple time spans. 7-4. Click outside the Calendar panel. The statistical results will display. The default display is the bar chart. Below is a sample screen showing the results polled from 3 areas. Up to 8 areas can be selected in one view.



Select different display modes using the **Bar** $_$, **Line** $_$, or **Pie** \bigcirc chart buttons.



Note that the timeline units can vary depending on the span of time you selected on the Calendar panel. If a date was selected, hourly data will display in chart. If a year was selected, monthly data will display in chart.

Use the following functional buttons to change the display parameters.

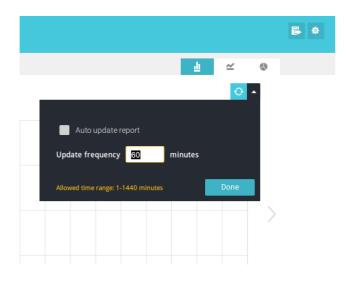
Show data on chart ______: Displays the collected numbers on chart.

Average $\stackrel{\wedge}{\longrightarrow}$: Displays the average number per time span unit (e.g., per hour). If the interval is changed to 30 mins, the average number will be halved compared to the number acquired by every hour.

Report Interval : Configure the intervals for polling data from the camera. The default for displaying results is by every hour. If you enter 30 minutes as the display interval, all data will be listed on the basis of the 30 minutes time span. The configurable range is 1 to 1440 mins.

0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 1	0 0	0	0
01:30	02:00	02:30	03:00	03:30	04:00	04:30	05:00	05:30	06:00	06:30	07:00	07:30	08:00	08:30	09:00	09:3	
									Cou	inting1	FlowPa	thcount1			<u></u>	#;	
									Re	port inte	erval 8	0	m	inutes			
	Are	as				All visits	/ Day	A							0		
	Co	ounting1				1			Allo	owed time	range: 1-1	440 minu	tes		Done		
	Flo	owPatho	count1			1			0		1588	31.8 m	ins	08	8:30		
				То	tal	2											

You can use the update menu on the side of the Refresh button to determine an automatic update schedule. You can let the statistic chart update itself by a regular interval.

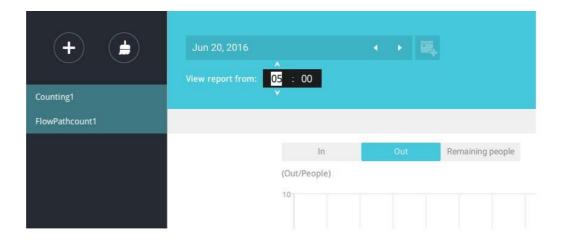


If you selected only one area, you can use the Shift key to select multiple areas (or two spans of time). You can select multiple dates in the Calendar panel.

Use the **Refresh** button ² to poll the latest data from the camera.



Use the time selector on the **View Report from** pane to select the start time of your statistics view window. Data collected before that time will not be displayed.



A number is displayed when you mouse over an area on the chart. Move your cursor to an area on chart, and the number is displayed.

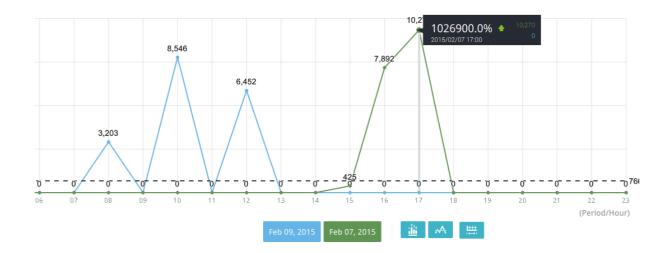


Data on a timeline will be generated. To close the window, use the close button on the second date information. Equivalent spans of time can also be used for comparison. For example, you can compare the data in a span of 4 days against another span of 4 days.

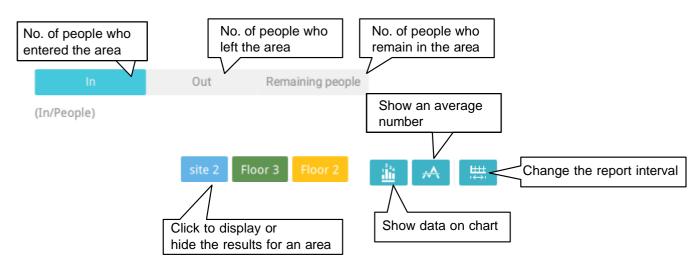
Note that the **Compare** function only applies when you select to display only one area on the screen.



In a comparison result displayed in a line chart, mouse over to the peak value to display the percentage of an increase or decrease rate.



See below for the functions of buttons on screen.



In addition to the charts, a summary of displayed data will be listed below showing the areas involved, visits/Day or Month, Average visits / Hours / Days, Average duration of stay / person, and the Peak hour.

	All visits / 4 days	Avg. visits / Day	Avg. duration of stay / Person	Peak day
	490,870	122,718	106.3 mins	12/04
	959,482	239,870	105.9 mins	12/02
	3,873,510	968,378	108.0 mins	12/01
Total	5,323,862			
	Total	490,870 959,482 3,873,510	490,870122,718959,482239,8703,873,510968,378	490,870122,718106.3 mins959,482239,870105.9 mins3,873,510968,378108.0 mins

8. When done with displaying the results, you can use the **Export** button to produce an image file to preserve the current results. Both a spreadsheet and a graphic chart will be produced.

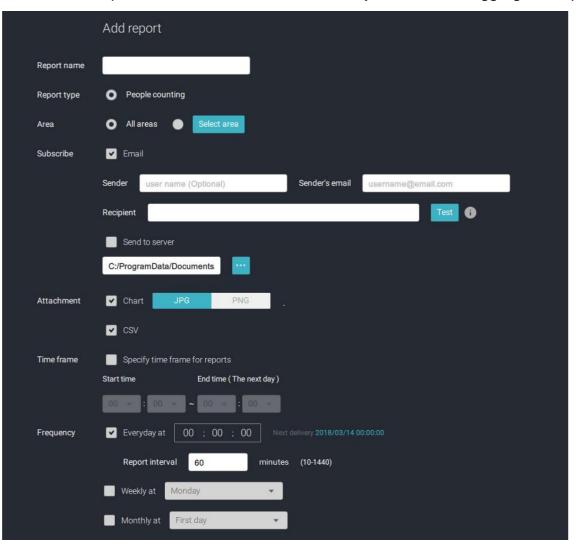
By default, the exported report is placed in:

C:\Users\Public\Documents\VIVOTEK Inc\VAST\Client\VCAReport

	e your screen c	efore export	
Chart	JPG	BMP	
🖌 🛛 Raw data	(CSV file)		
Save to			
C:/ProgramDa	ta/Documents	s/VIVOT	
	ler after expo		

- Click the Reports Subscription button to configure the regular report sent to your Email account or a specific location on the server itself.
 Select the following:
 - 1. Report type: People counting results, or Heatmap (Heatmap does not produce the CSV file)
 - 2. Area: All areas or a preconfigured area.
 - 3. Subscribe: Enter the sender and recipient Email addresses. You can also configure to send the report to a specific location on the server.
 - 4. Attachment: Select to attach graph Charts in JPG or PNG, and the CSV data files.
 - 5. Time frame: Select the time coverage of the report, during which data is collected.
 - 6. Frequency: Specifies when and how frequently to deliver the reports.

Select the time to deliver your mail notification. Enter valid Email addresses as the sender and receiver addresses and make sure the SMTP mail server configuration has been properly configured on your VSS server. This VCA mail notification utilizes the mail service on VSS for regular notification. You can then receive Email notification every day on your Email account. You can enter up to 5 recipient addresses.



Select the report interval to determine how often you receive an aggregated report.

Note that the notification contents is your current field of view, including a Bar, Line, and Pie chart combined into one image file. The In/Out/Remaining results will be generated into 3 charts. Each Area will generate one CSV file, and each CSV data file will contain In/Out/Remaining/Summary information.

The generated file names will look like this: 20160226_test02_Remain.jpg for charts and 20160226_Summary.csv for CSV files. The Email subject will be "VCA Daily Report - 2016/02/26."

Note that if you manually export a report, the default is sending the data collected until one hour before the manual export. For example, if you generate the report at 14:07, the report will only cover the data collected until 13:59. You may use the Refresh button to manually generate an immediate data input (those occurred between 14:00 and 14:07).

You may configure to receive regular Counting Report as Weekly or Monthly using the associated menus.

Below are the messages with the Email test function.



3-4. Data Magnet

What is Data Magnet?

Data Magnet is an open platform for external hardware or software systems to integrate external data into VSS and VAST2, such as Access Control, License Plate Recognition (LPR), Barcode Scanner, etc.

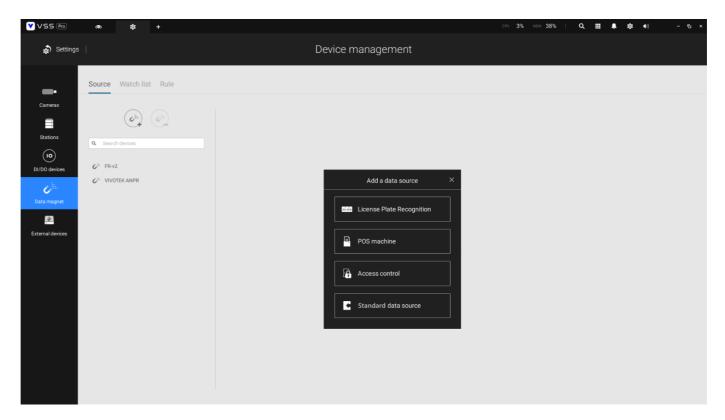
Initial Setup

The first step of setup is to add a data source first. Data source refers to the external system that sends data to VSS.

Before setup, you can refer to the integration file of the data source you want to add.

Different external systems need to choose different data source types.

- Select Standard data source if the external system providers conform to the Data Magnet integration standard.
- Select License Plate Recognition for VIVOTEK LPR camera.
- Select Access control if the access control providers especially integrate with VSS.
- Select POS machine if the POS machine providers especially integrate with VSS.



After selecting the Data source type, you need to set the port to receive data from the data source. The port setting must be the same as the data magnet setting at the other end of the external system you want to receive. If Data source authorization is ticked, the data magnet on the external system side needs to enter the VSS login account and password to receive the data. The related camera is to choose which camera image is related to the incoming data.

					_
VSS Pro	ത ‡ +		CPU 4% MEM 38% Q	III 🐥 🅸 🕪	
🔊 Settings		Device management			
Cameras Stations DI/D0 devices DETA magnet External devices	Source Watch list Rule	Add third party data source Source Name Por 943 (HTPS) / 3454 (HTP) C Is source authorization Related camera Sect cameras		Add Cancel	

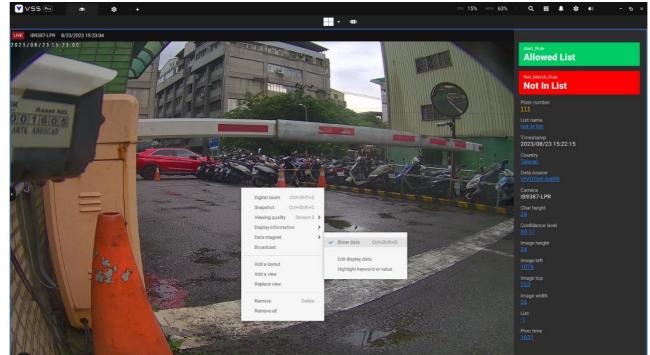
Data Magnet Function

After adding Data source, Data Magnet can use the following three main functions:

- 1. Live View Display Data
- 2. Watch List Trigger Actions
- 3. Data Magnet Search

Live View Display Data

After setting up the Data source, you can go to the live view screen of the camera to which the Data source is connected. Then, click the right mouse button to call up the menu and select Data magnet. Check Show Data to call up the Data Magnet data display column. When the data source has transferred data to VSS, the data will appear in this field. The data and order displayed in the field can be set in Edit display data.



Watch List Trigger Actions

To use the Watch List trigger action, firstly go to Settings > Data Magnet > Watch list. The function of the Watch list is to let the system monitor the data of different fields sent from the data source. First, select the source and classification you want to monitor, and then enter whether you want to monitor a certain keyword sent by that classification. If you do not enter a keyword, it will be triggered as long as the classification you input has sent in data.

The fields of Classification must refer to the field definitions at the Data source end, and the classification defined by each data source is different.

VSS Pro	۲	\$ +			CPU 5% MEM 38%	्र 🏭 🛓 🕸	x ●) - ™ ×
🔊 Settings			Device ma	nagement			
Cameras Stations DI/DO devices Data magnet		Watch list Rule	Add watch list Name Set up sources, classifications, keywords to wa Classification		Q Se	arch keywords	
External devices			Set up keywords to further limit the scope Add keywords manually or import a watch Determine time duration	e of the watch list. h list file.	words		

Take the VIVOTEK LPR camera as an example; assuming that you want to observe the plate number, enter the plate number in the classification field, and if you want to monitor vehicle number J16015, then enter J16015 in the keyword. Thus, when the VIVOTEK LPR Camera sends this vehicle number to VSS, the watch list will be triggered. If you want all vehicle numbers transmitted in VSS to be triggered, you don't need to input any data for the keyword.

VSS Pro	oo \$\$ ¢ [≞] ⊦+		CPU 3% MEM 38% Q 🏭 🌲 🏟 🌒 — Fo x
🔊 Settings		Device management	
Cameras Cameras Stations O(D) DI/D0 devices	Source Watch list Rule	Add watch list Name LPR_Allowed_List	Q Search keywords
External devices		Set up sources, classifications, keywords to watch simultaneously VVOTEK ANPR • Setexted 1 Camacas • Plate number • J16015 Determine time duration 15	• Description

Suppose you want the trigger to happen only when the data of two different data sources meet the conditions at the same time. In that case, you can enter the conditions for the second data source to monitor in the second field of the watch list.

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🔊 Settings		Device management	
Settings Cameras Stations D//D0 devices D//D0 devices External devices	Source Watch list Rule	Add watch list Name LPR_Allowed_List Set up sources, classifications, keywords to watch simultaneously VVVOTEK ANPR FR-42 Selected 1 Cameras Plate number A11222 Know J16015	
		Determine time duration 15 seconds (1–99)	Done Cancel

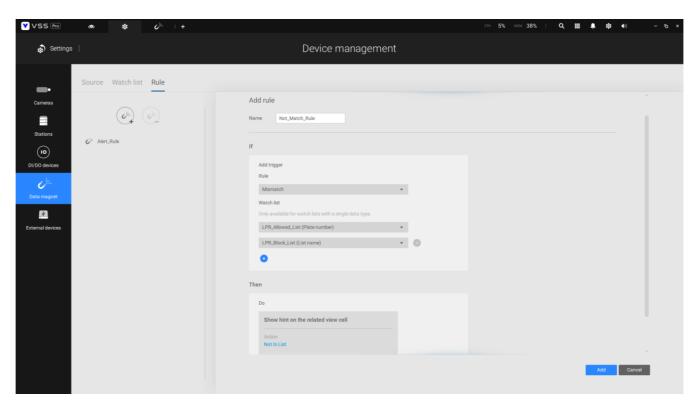
VSS Pro	oo tat Cj⊨ +		CPU 3% MEM 39%	⊂ ≣ ≜ :	\$t ●I) - 1 <u>5</u> ×
🔊 Settings		Device management			
Cameras Stations DI/DO devices	Source Watch list Rule	Watch list Name LPR_Allowed_List Set up sources, classifications, keywords to watch simultaneously	Q. 500	rch keywords	• 5. 6
Data magnet		VVOTEK ANPR Selected 1 Camer Add an item Plate number I A11222 J16015 Description Optional Xed Cancel	•	Description	

After the Watch List is triggered, there are two places where you can set what to do after the triggered action. The first one is the Rule.

Firstly, set Add trigger under If to decide how to trigger when there is a match or no match in the data of the watch list. Then, select which watch list to match. If you select two watch lists to match, any watch list having a match will trigger. If you select two watch lists to unmatch, the trigger will happen when the data in the two watchlists does not match.

Secondly, set what action to execute after the Do setting under Then is triggered. Currently, two actions are supported. The first one "Show hint on the related view cell" is to display a more obvious hint on the camera live view (like the red and green boxes on the right of the window). The second "Select data to send to Wiegand converter" is to send the triggered data (such as the car number mentioned earlier) to the Wiegand converter added to VSS external devices.

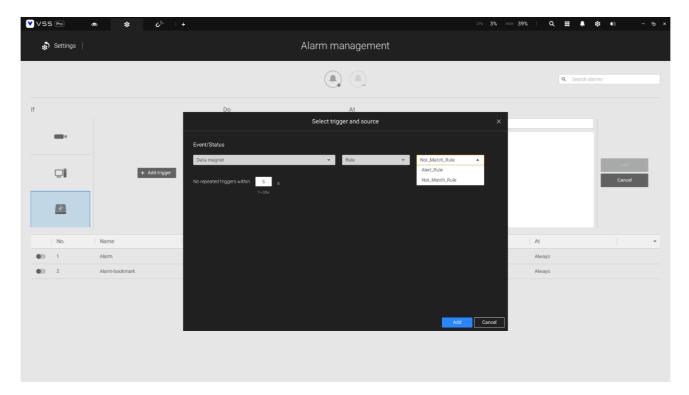
	+	CPU 4% MEM 38% Q, III 📮 131 📢 - 16 ×
🔊 Settings	Device management	
Carrers Carrers Stations DUDD devices Cternal devices Cternal devices Composition of the state of the s	Add rule Name Mert-Rule If Add rigger Rule Watch 100 UPC.Block.List (List name) The Do 0	





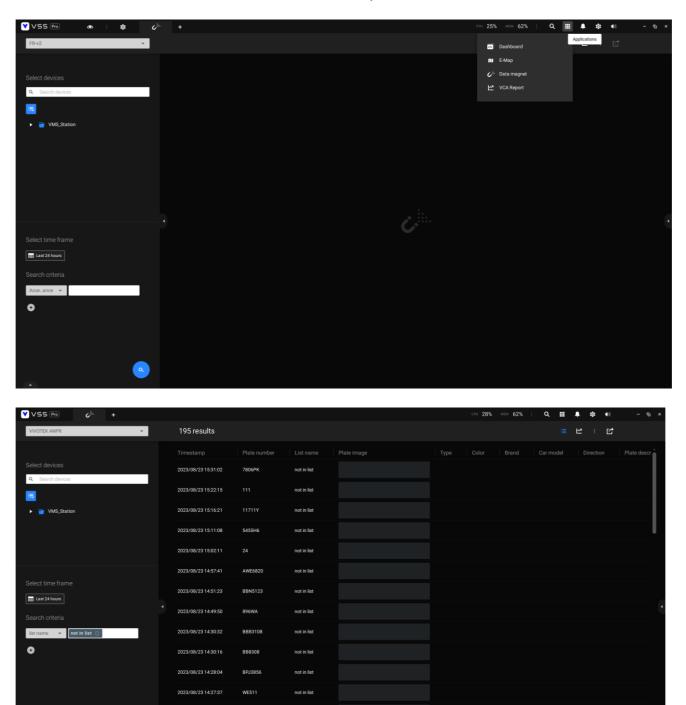
Another action that can be triggered is in Alarm management.

Go to Settings > Alarm > Add an alarm, then select External device event under If and select Data magnet under Add trigger. Now, you can choose whether to use the rule or the data of a certain field as the alarm trigger. Then, you can select the actions alarm management supports.



Dat Magnet Search

Run Data magnet from the Applications in the title bar on the upper right, and the Data Magnet Search function will appear. You can select the data source, devices, time, or search criteria to search for the data transmitted by the data source.



2023/08/23 14:20:38

ATF8702

not in list

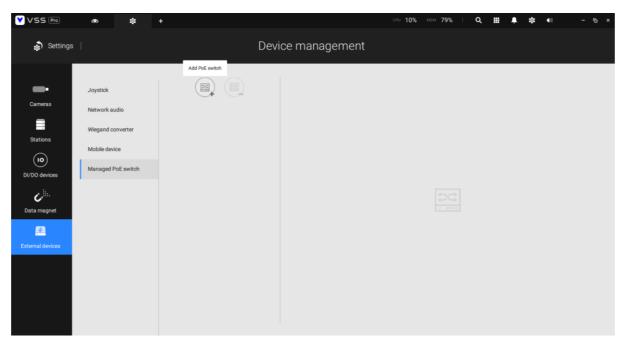
3-5. Managed PoE Switch

Introduction

Starting from VSS version 1.2, users can integrate VIVOTEK Managed PoE switches as External devices into VSS. This integration allows users to access several functionalities of the PoE switch through VSS, such as controlling the PoE on/off of each port, viewing the topology of the switch connected to cameras, and monitoring the overall network traffic of the switch. This feature assists users in monitoring traffic for cameras through the PoE switch and in conducting basic troubleshooting.

Configuration

Before starting to use the integration features of the Managed PoE Switch, users must first add the PoE Switch to the VSS External device. Users can navigate to Settings > Device > External device > managed PoE switch, click the Add PoE Switch button as shown in Figure 1, and add a new PoE switch. In Figure 2, users can input relevant information about the PoE switch, including the device name, IP address, connection port, login username, and login password. It is important to note that the PoE switch must be in the same network segment as the VSS server to be discovered. Additionally, this integration only supports VIVOTEK brand-managed PoE switches, so please refer to the support list in the datasheet for compatibility details. You can also delete the existing PoE switch by clicking the delete PoE switch button.





			CPU 5% MEM 80%	α Ⅲ .	L 1\$T 4∥	- 12 ×
🄊 Settings	Devic	e management				
 Settings Cameras Stations Dr/Do devices Cino Dr/Do devices 	Devic	e management Add new PoE s Device name IP/Domain name Port User name Password	witch PoE Test 10.42.2.42 80 admin		Ndd Cancel	
2		Password	•••••		Add Cancel	

Figure 2

Operation

After adding the PoE switch to VSS, you can click on the PoE switch, and on the righthand side, you will see the information and related integration web pages for that PoE switch, including PoE on/off, Topology view, and traffic monitor. It is important to note that some VIVOTEK Managed PoE Switches only support the PoE on/off page as shown in Figure 4.

Under the information page, you can see basic information about the PoE switch, including Device name/model name, IP address, MAC address, connection port, and firmware version, as shown in Figure 3.

Device name PoE Test Model IP 10.42.2.42 MAC Port 80 Firmware		Information PoE On/Off Topology view Traffic monitor	
Port 80	PoE Test	Model	
Apply Cancel		Port 80	



	Information Po	pE On/Off
PoE Test PoE Lite	Device name Model IP MAC Port Firmware	PoE Lite AW-GEL-105A-110 10.42.2.78 002:01:AB:1E4C 20 Y001

Figure 4

Clicking on the PoE On/Off page, as shown in Figures 5 & 6, you can access the PoE On/Off webpage for that particular switch. On this page, you can control the on/off status of all PoE ports and view the PoE usage status of each port.

	Information PoE Or	n/Off Topology view Traffic r	nonitor
PoE Test	<pre>< > c VIVOTE</pre>	K ≡	HØG
	Power Over Ethe	rnet Configuration	♣ Home > PoE Management > PoE Configuration
	PoE Firmware Version	RNU-1002	
	Primary Power Supply [W]	370	
	Reserved Power determined by	Class Allocation LLDP-Med	
	Capacitor Detection		
	PoE Port Configurat		
	Port PoE Mode	Extend PoE PoE Schedule Mode	Priority Maximu Power

Figure 5

	Informatior	PoE On/Off			
PoE Test		onfiguration	105A-110		
	Port Setti	-	Future d Dar F. Marda	Dec Auto sheeking	Def Debut
	Port Port 1	PoE Mode	OFF •	PoE Auto-checking	PoE Reboot
	Port 2	Enable •	OFF •	OFF •	
	Port 3 Port 4	Enable • Enable •	OFF •	OFF OFF	
	Port 5	Enable •	OFF •	OFF	
	Port 6 Port 7	Enable Enable	OFF OFF	OFF OFF	

Figure 6

On the Topology view page, as shown in Figure 7, you can view all the connected cameras or devices of the switch, and you can operate basic troubleshooting for the connected cameras, including reboot/diagnostic.

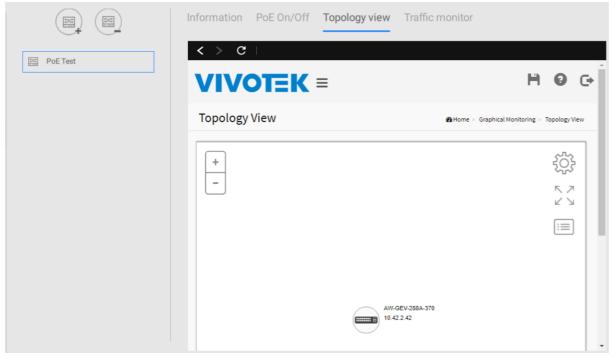


Figure 7

On the Traffic monitor page as shown in Figure 8, you can monitor network bandwidth for each switch port.

	Information PoE On/Off Topology view	Traffic monitor
PoE Test	< > c ⊥	H 0 0
	Traffic Monitor	
		Sevice List
	AW-GEV-288A-370 • Total Rx Tx 1000 Mb 900 Mb 800 Mb 700 Mb 600 Mb 500 Mb 100 Mb 100 Mb 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 192021 22 23 24	2024/02/06 Day Week

Figure 8

Chapter 4: Settings

4-1. Settings > System > Preferences

The Preferences page for VSS client and Station sides allows you to configure the following:

Client Setting:

- 1. Select the UI text language.
- 2. Configure a default destination for exporting video, snapshots, or configuration backups. The default is "C:\Users\Public\Documents\VIVOTEK Inc\VAST\Downloads". You can change the media format via the checkboxes.
- 3. Select the format for the snapshot as either JPG or PNG.
- 4. You can select the length of the Alarm-triggered videos by specifying pre- and postalarm recordings.
- 5. You can designate the VSS client interface to automatically start once the client computer is started.

VSS Pro	۲	\$ +		сри 0% мем	87%	ର ଆ	Ļ	\$ \$	(1))
🔊 Settings	I)	System	m manageme	ent					
i License SMTP Preferences Identity management	Client Station	Language English Export Location Snapshot format Additional video before alarm trigger Additional video after alarm trigger Export clips with Standalone Player	5 mins	tts/\ (1~10) (1~60)					
Media		On startup Start application on system startu Open set of pages Screen display		View 👻		vinte a		• Can	rcel

6. The default Live view, which may span across multiple monitor screens and display Live view, Tour, Dashboard, E-Map, or Alarm prompts. The precondition is that you should configure one or many views before making the Startup configuration.

Below is a server/client with dual monitors, you can select one view to be displayed on one monitor, or place an E-Map on another.

On startup							
Start application on	i system startup						
Open set of pages							
Screen display		Screen 1	View	٠	Select one view	*	
1	2	Screen 2	Emap	*	Select one map	*	0
		0					

Click the Apply button for the configuration to take effect.

If you plan to have one monitor to be working for other purposes, select No display for this monitor.

VSS Pro	۲	\$ +		cpu 3%	MEM 85	%	۹		Ļ	ţ.	(1)
🔊 Settings		Syster	m manage	ement							
i License	Client Station	Language English +									
SMTP SMTP Preferences		Export Location Snapshot format Additional video before alarm trigger Additional video after alarm trigger Zxport clips with Standalone Play	1 5	ocuments/\ 👕 PNG mins (1~10) mins (1~60)							
Media		On startup Start application on system start Open set of pages Screen display	up Screer			No existin e > Right-cl					
		1	Screen	View Tour Dashboard E-Map Alarm No display		e > Right-cl					0
		Default logical tree folder Expanded Collapsed		no dispidy				Арр	oly	С	ancel

Below are the additional system parameters:

Default logical tree folder: Expanded or collapsed.

Substation streaming connection: CMS Relay or Direct link. Direct link allows a client station to access camera live stream from the sub-station under a CMS main station. CMS relay - A client accesses live stream via the CMS main station.

Show system warning: When a client computer is running short of virtual memory, a warning will display.

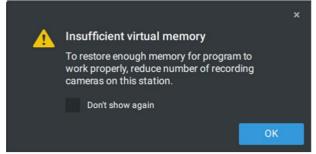


Image resampling method: Select a resampling method if the need should arise.

Click the Apply button for the configuration to take effect.

Station Setting:

1. Deep Search - Only users with an admin account can see and manage this setting. Turning it on allows VSS to utilize and store person attributes and full-body/face images for improved people search. Additionally, you have the flexibility to decide whether to enable or disable VSS from utilizing and storing face snapshots based on your specific needs. The stored data will be recycled with recordings based on the recording recycle setting. Before turning it on, ensure compliance with regional privacy laws and obtain consent from individuals for using their attributes and images if required. Once the Deep Search function is turned off, Deep Search cannot function, and the Deep Search icon on the view cell for the VIVOTEK AI cameras will be switched to the Smart Search icon. Note that the setting will not be applied successfully if the software versions among clients and servers are incompatible.

VSS 🖻	Ø	\$ +	라인 39%, MAN 91%, Q, 田 条 幸 4비 - 15 ×
🔊 Settings			System management
Control Locarias SMTP Preferences Control management Control management Control management Control management Control management Medias Freetback and bags	Client		Performance Perfo
			Log

2. **Display Watermark over video** - Administrators can select to display watermarks on the video feeds of the VSS clients. The opacity and display frequency can be adjusted.

Encrypted watermark for authentication:

To ensure your video is authentic and has not forgerized, adding an encrypted watermark on the data stream can be achieved with a customized password. You can use the Standalone Player to verify which frames in the video footage have been tampered with.

If enabled, the following will be displayed: camera name + substation name + VSS user name + user computer current time. The purpose of a watermark is to preserve evidence if the video screen is recorded using cell phones or other devices. 3. **Digital watermark** - To prevent forgery of recorded or exported video clips, and to prove the validity of surveillance evidence, digital watermark can be appended to recorded video.

Note that only non-administrator users will see watermarks.

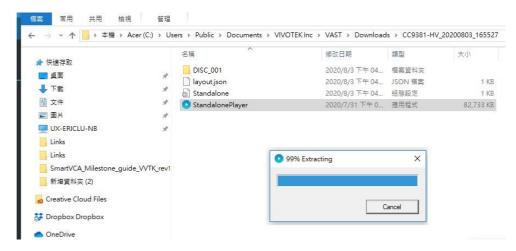
To enable the text watermark, use the slide button. Use the Preview function to tune the text opacity and text frequency display on the screen.

YV55 (7R0) @ \$ +		Trial version 011 46% 1011 81% Q	⊞ ♣ \$ •I	- 10 ×
🔊 Settings	System management			
Carte Ca	Dipply watemark over vide Canadidation of the status and status a			
	Data magnet			
	Trend Micro IoT Security events			

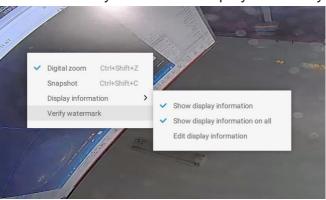
To enable Digital watermark, enter a password that is at least 16 characters long. Once a valid password is available, you can click the Apply button to preserve your setting.

VSS Pro	۲	\$ + CPU 3% MEM 84% Q 🏭 🌲 🏟 📢
🔊 Settings		System management
Ð	Client	Deep Search 🛛 💶
License	Station	Utilize and store face snapshots This setting can only be managed by system administrator. Enabling Deep Search indicates that you have adhered to regional privacy laws and allows the utilization and storage of both full-body and face snapshots for improved people search. You can choose to exclude face snapshots for privacy concerns. Pease wist the following URL Forme information: <u>Filter Jewark works concerns</u> , the store of the privacy of the store of the privacy of the store of t
SMTP ∳↓∳		Display watermark over video
Preferences		Administrators will not see them. Preview
Media		Digital watermark Watermark password 23423d12dfasdf (16 - 64 characters, letters and numbers only)
Feedback and bugs		Recording encryption
		Alarm
		Reserve time 60 days(1~365)
		Log level Normal -
		Apply Cancel

When you export a video clip, a StandalonePlayer is generated with the exported files.



Right-click on the StandalonePlayer screen to display the "Verify watermark" function.



190

The Verify screen will display. Enter the pre-configured password. Click Verify.

	Verify watermark		×
Enter password		Verify	
Verification status			
0	0	0	
U	U	U Frame without	
Frame matched	Frame not matched	watermark	

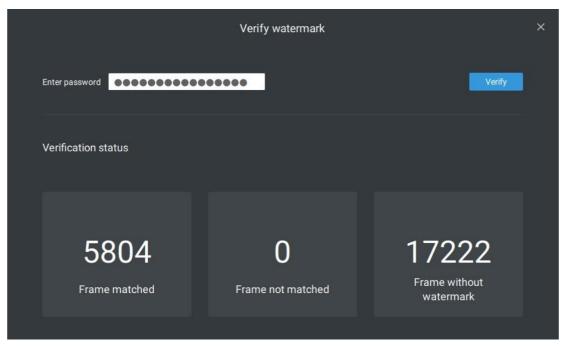
The below result shows that the video is authentic and has not been forgerized.

Frame matched: Your video was exported with the digital password, and you entered the correct password.

Frame not matched: Your video was exported with the digital password, and you entered the incorrect password.

Frame without watermark: a. If your video wasn't exported with the digital password. b. If your video was exported with the digital password, and your video has been tampered.

If the numbers in the "Frame not matched" or "Frame without watermark" are not zero, it means your video is probably not correct.



- 4. **Alarm** Reservation time: Configure the preservation time of the alarms and logs. Note that some alarms can be triggered with recorded videos. Configuring a preservation time can help reduce the use of storage space on server.
- 5. Log: Use the menu to configure the preservation time of the Major, Normal, or Minor logs.
- 6. **Bookmark**: Configure the days of preservation for bookmarks.
- 7. Data magnet: Configure the days of preservation for data related to Data Magnet.
- 8. **Trend Micro events**: Configure the days of preservation for events related to cyber security.
- 9. **Database**: Configure the destination of the database folder. The database contains information for system log, alarms, Bookmarks, data magnet, Counting Reports, POS transaction data, snapshots, and Trend Micro IoT security information.

Recording Encryption - Recording encryption allows users to encrypt the recording videos with password protection. Playing the encrypted video on the original VSS server does not require entering the password.

- Playing on other VSS servers or disabling recording encryption will require entering the password. The password is not able to recover or reset if you forget the original password.
- Encrypted video files (.3gp) cannot be played in other media players. Please use the following two methods to view the video files outside the original VSS server.
- 1. Import to other VSS servers as Local DB
- a. Copy the entire recording folder from the original VSS server to another location.
- b. Enter Settings > Recording > Local DB in another VSS server.
- c. Add local DB with VMS/CMB backup type.
- d. The recording will be mounted as a local DB and listed sub-tree.

VSS Pro	os \$≄ ₽6 ⊨+		Trial version CPU 1% MEM 75%	Q Ⅲ ♣ \$ •0 - % ×
🔊 Settings		Recording management		
Recording options		Add Iocal DB Type INVR disk I NVR backup I VMS/CMS backup Source	,	
Local DB				
				Candi

- 2. Import to VSS Standalone player as Local DB
- a. Copy the entire recording folder from the original VSS server to another location.
- b. Launch Standaloneplayer.exe in C:\Program Files (x86)\VIVOTEK Inc\VAST\Client\ VSS\
- c. Add local DB with VMS/CMB backup type by dragging the entire recording folder or using the "+" button.
- d. The recording will be mounted as a local DB.

\odot		CPU 0% MEM 75% 4∥ - 1	×
File Local D8			
\checkmark			
Drag files or folders here or use the "+" button			
2/5/2023	23:00:00 H < > H - 1x +	r • •	
4:00	22.56.00 22.58.00 22.99.00 23.02.00 23.04.00		

4-2. Settings > System > SMTP

Configure a mail server via which the system alarms or notifications can be delivered to a receiver.

Enter the Settings page, select SMTP. Click on the Add SMTP button.

Enter your mail server's domain name or IP address. Enter credentials for access to the mail service.

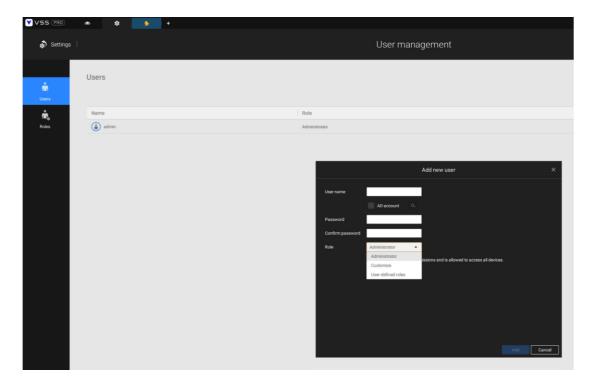
If SSL encrypted transmission is preferred, select its checkbox.

Click Add to complete the configuration.

4-3. Settings > User Management

The User Add & Delete page allows you to create users with the permissions for different operational capabilities.

To specify the authorized privileges, select Customize in the Role menu, then select the Permissions and/or the Accessible devices tabbed menus.



Use the Customize option to limit the authorized actions of a user. In the Permissions tab, click the expand button Configuration menus. Select or deselect the checkboxes to configure the user privileges. For example, you may not want a user to operate Alarm and E-Map. If so, deselect these checkboxes.



In the Accessible devices tab, click to select the cameras that a user can access. Some users may only need to access specific devices.

Permissio	ns	Accessible devices
	-	
Q Search	devices	
• 🖸 🛢	VMS_Stat	ion
	👕 ND93	322P
	🛡 FD81	77-HT
	🖝 FE93	91-EV
	■■ IP91	91-HT
	🕳 FE93	91-EV
	■■ IP919	91-HT
	🖝 FE93	91-EV
	■ IP919	91-HT

When done with the privilege settings, click Add to create a new user.

The new users will be listed under the Administrator's icon. Repeat the process to create more users.

Note that you can place a limitation on a user's access right to the recorded videos by setting a barrier for access to the older recordings. Recordings older than a configurable period of time will not be accessible.

			Edit user				×
_							
	E-Map						-
	Export media						
	Event search						
	Live				×		
	Log	Limit Playback a	accessible time fr	ame 🌑			
	Play	Last 24	hour (1~9999)				
	PTZ						
	Sna			Apply	Cancel]	
	Two-way aud	lio					
	VCA Report						
	View						
							•
						Apply	Cancel

Add a New User Account - Windows AD Account

In an established, enterprise network environment, the support for Windows AD (Active Directory) infrastructure enables ease of integration using the credentials of existing users. Using the same AD authentication methodologies, you can configure the clients or users in an established network to access the VSS server configuration.

Note the following with Windows AD support:

- 1. If you install VSS server on a Windows XP machine with PostgreSQL server, the login using a Windows AD account will not work.
- 2. The VSS server must reside in a domain managed by the AD server.
- 3. This function does not support the environment that spans across multiple AD domains.
- 4. A user account hosted by an AD server cannot be modified in VSS.
- 5. A User Group and its members configured in AD cannot be managed in VSS.
- 6. You cannot add an account having the same name as one you used to log in VSS.
- 7. There are 3 types of account for VSS: VIVOTEK account, AD single user, AD group.
- 8. The userPrincipalName of your Windows AD account can be different from the sAMAccountName. However, You can only use the sAMAccountName to login VSS.
- 9. The userPrincipalName field of your Windows AD account should not be empty.

To add an existing AD user:

1. Select the AD account checkbox.

🔊 Settings			User management
û. Users	Users		
ŵ,	Name	R	Role
Roles	admin	Ad	Administrator
	m ===	Ad	Administrator
			Add new user ×

- 2. Click the Search button.
- 3. Enter a username or group name to search, e.g., Frank. Click **OK** when done.

	Select User	r or Group		?	x			
Select this object type:								
User, Group, or Built-in s	ecurity principal		Obje	ect Typ	es			
From this location:								
ericthegreat 123.com			Lo	cation	s			
Enter the object name to	select (<u>examples</u>):							
admin			Che	ck Na	mes			
						,		
Advanced		OK		Cano	el			
	Mu	Itiple Names Fo	und					x
More than one object ma object from this list or, to r Matching names:	tches the following ob	ject name: "admin". S						X
object from this list or, to n Matching names: Name	tches the following ob reenter the name, click Logon Name (pr	ject name: "admin". S	elect an Descripti			In Folde		
object from this list or, to r Matching names:	tches the following ob reenter the name, click	ject name: "admin". S « Cancel.	elect an		: f	erictheg	r reat 123 reat 123	

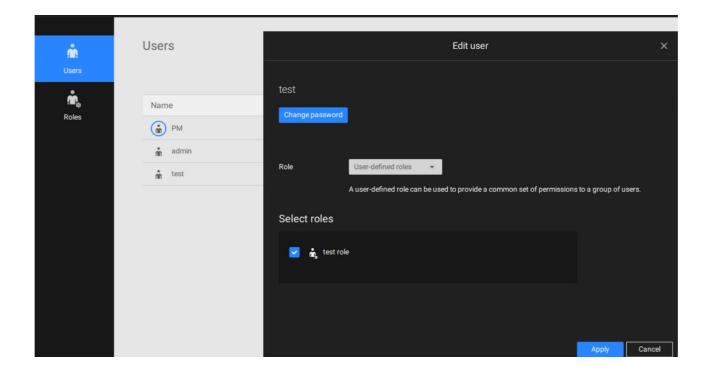
- 4. Enter the password twice for the AD user.
- 5. Select the privilege role for the user, configure his/her privilege settings as described above and then click Add.

User Roles

A user-defined role allows you to define a common set of permission for a group of users, reducing the setup time for different groups of users.

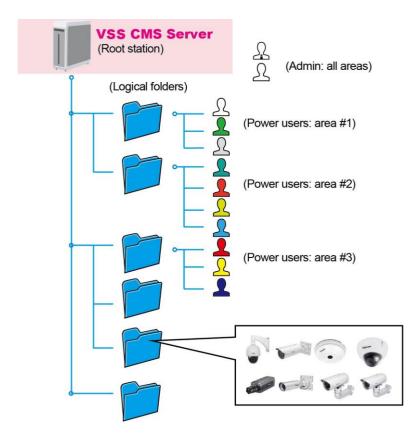
You can specify the role name in the first column. Also, you can select existing users for this new role. Note that once the users are selected for a new role, it will change its role and corresponding authorities. Each role can be assigned with the permissions and accessible devices like customized settings in user accounts. Users can select more than one role and have the unified settings for all roles' permissions.

VSS Pro	തം ‡ +	Trial version 🔥 CPU 17% M	MEM 73% Q 🏭 🌲 🏟 🕪 – 🗗 🛪
🔊 Settings		User management	
nin kara	Construction of the second sec	New role A used defined role can be used to provide a common set of permissions to a group of use Role name 0 users Select users Authorize Permissions Accessible devices Configuration Operation 	



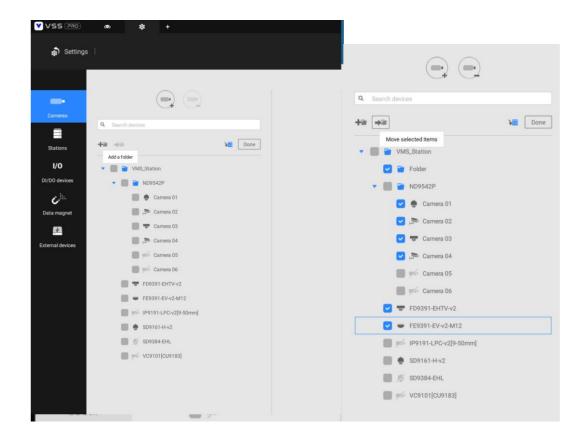
Logical Folders

The Logical Folders allow you to re-define the logical relationships between the realworld deployment and the physical devices (cameras). For example, according to your deployments, you can designate several cameras to be listed under a logical sub-directory named as "Building A," and the other cameras into "Building B." In this way, you can rearrange your cameras and devices on a tree view that is geographically more accurate.

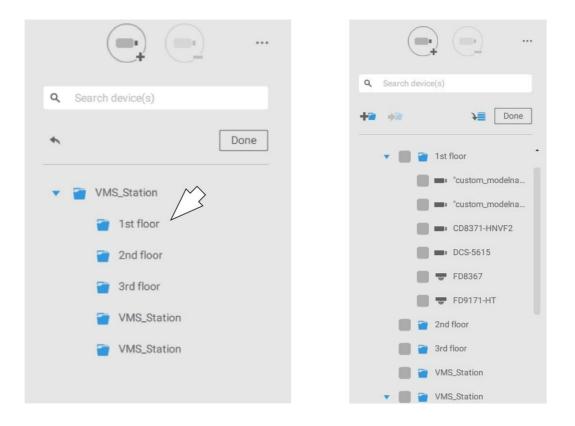


To create logical folders:

- 1. On the Settings > Cameras page, click the Edit 🖉 button.
- 2. Click on the Add a folder button.
- 3. Enter a name for the folder (e.g., 1st floor, 2nd floor) according to your needs as shown below.
- 4. Repeat the process to create more folders.
- 5. Make sure you enlisted all cameras in your deployment. You can start moving cameras to specific folders. Click on the Move Selected Items button.



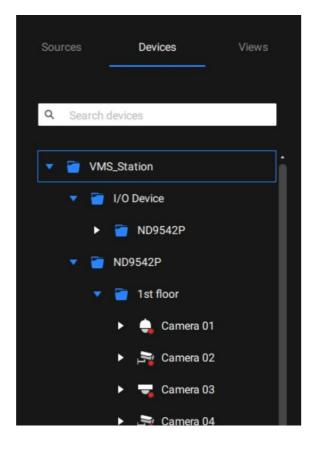
6. Select a logical folder to move the devices to. The selected devices will be listed under the logical folder you selected. Repeat the process to move cameras to each logical folder.



You can also use the add device button to select devices from the list and move them to a specific folder.

Q. Search devices	
+a +a	V Done
VMS_Station	Add one or more devices from device list
🔻 📗 👕 ND9542P	
🔻 🛃 👕 1st floor	
🕑 🌻 Camera 01	
🛃 🎥 Camera 02	
🛃 🖶 Camera 03	
🛃 🎥 Camera 04	
Camera 05	
Camera 06	
FD9391-EHTV-v2	
FE9391-EV-v2-M12	
IP9191-LPC-v2[9-50mm]	
D9161-H-v2	
📕 🚿 SD9384-EHL	
VC9101[CU9183]	

Return to live view, and you can see the configuration change takes effect.



4-4. Settings > Device > Cameras

In addition to the add device process during the initial setup, you can add more cameras or arrange the device list in Settings 🔅 > Device > Cameras.

Below are the locations of the functions for adding devices (after clicking) to the VSS server.

Settings Carrenas Carrenas <th>VSS Pro</th> <th>0</th> <th>尊</th> <th>+</th> <th></th> <th></th> <th>CPU 3% MEM 87</th> <th>"% Q</th> <th>Ⅲ ≜ \$\$</th> <th>(0)</th> <th>- • ×</th>	VSS Pro	0	尊	+			CPU 3% MEM 87	"% Q	Ⅲ ≜ \$\$	(0)	- • ×
Carneras Carneras Stations Color Color Color <	settings	I			Devi	ce manageme	ent				
Statulis Logical folders Status IP MAC Port Model Br Image: DV/D0 devices Image: WMS_Station Image: WMS_Stati	Cameras	Q Searc	h devices	-		0] /			×
DI/D0 devices FD837-HTV • FD9382-EHV-v2 • FE9382-EHV-v2 Data magnet • IB9391-EHTV-v2 • IP9191-HT-v2[3.9 • Camera Options • External devices • Option				\geq	Status		MAC			·	Î
FD337-HTV Click to select or deselect · FE9382-EHV-v2 · Click to select or deselect Data magnet · IB9391-EHTV-v2 · IP9191-HT-v2[3.9 Camera Options External devices · · · · · · · · · · · · ·	(10)	🔻 👕 V	MS_Station			0.0.0.0		80	XND-6081FZ	ONVIF	
 FE9382:EHV-v2 Data magnet IB9391:EHTV-v2 ID:66.104.102 00-02-D1-AC-BD-26 BB9387:EHTV-V3 IP9191:HT-v2[3.9 IP9191:HT-v2[3.9 IP9191:HT-v2[3.9 	DI/DO devices	-	FD837-HTV		Click to sele		02-63-6C-28-D5-BE	80	CC9391-HV		
Data magnet IB9391-EHTV-v2 10.66.104.102 00-02-D1-AC-BD-26 80 IB9387-EHTV-v3 Image: IB9191-HT-v2[3.9 Image: IB9191-HT-v2[C.III.		FE9382-EH\	V-v2			02-BC-B7-4B-D5-4C	80	CC9390-HV		
External devices		,s	🕷 IB9391-EHT	"V-v2		10.66.104.102	00-02-D1-AC-BD-26	80	IB9387-EHTV-V3		
External devices Record video with recording anagement: DefaultGroup			∎ IP9191-HT-v	v2[3.9		Camera Options		80	FD9369	ONVIF	
Synchronize camera time with system Speed up (add as offline camera) Add Cancel	External devices				Record video Synchronize c	v amera time with system	DefaultGroup		\sim	Cancel	

Note that you must know the credentials for password-protected cameras. You will not be allowed to enlist cameras that come with unknown credentials.

For cameras outside the local network, you can manually enter its IP address, or use a preconfigured device list to automatically introduce new devices.

If all devices come with the same credentials, you can select these devices and click Authorize to enter the credentials.

Record video with recording management: You can decide which recording group to record the videos using a pull-down menu.

Speed up (add as offline cameras): Normally, you should have all the credentials for access to all network cameras. However, in the condition that you add a large number of cameras using the "import devices from device list" function, you can temporarily use this speed up option to add these cameras.

This applies when the cameras have not been installed (have been prepared for installation), but you want to add them to the camera list. When cameras have all been installed, VSS will attempt to connect with them.

Retrieve RTSP streaming on specific port: The default port for RTSP streaming is 554. If you want to change this port, please check this item and fill in a desired port number.

Streaming URL

This is an optional feature. You can enter a camera's IP address to add a camera's RTSP streaming for live view and recording, and playback. The feature enables the support for obsolete models.

To insert a camera using the URL-like command,

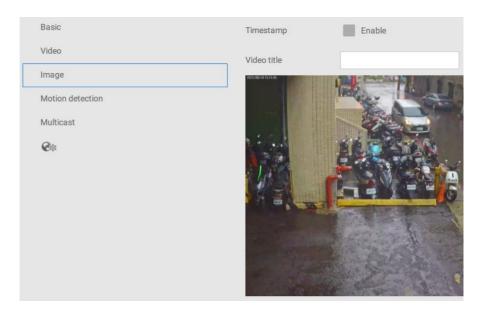
- /vvtk) Authorize... + E
- 1. Select the camera Brand as "RTSP."

- 2. Enter the camera's IP address.
- 3. Enter the camera's MAC address as printed on the camera label, or one found by the Shepherd utility.
- 4. Enter "554" in the Configuration port.
- 5. Enter "live.sdp" in the URL field, as this is part of the original RTSP streaming command: "rtsp://172.18.204.58:554/live.sdp". If streaming stream #2, enter live2.sdp.
- 6. Select a preferred protocol.

Only the live view, recording, and playback functions are supported if thus connected. All other functions are not supported, such as auto streaming size or changing to another video stream. Neither are camera DI/DO supported.

7. For administrators who need to synchronize device time with an NTP server, he can deselect the "Synchronize camera time with system" checkbox.

11. If you click a specific camera, you will see five tabs: Basic, Video, Image, Motion detection, and multicast (the last two tabs may be empty depending on camera models):



- 12. Basic: shows the fundamental information including camera name, addresses of IP, port & MAC, brand, and protocol
- 13. Video: provides options for video quality settings such as type, frame size, and frame rate
- 14. Image: selects whether to enable timestamp and add a video title name
- 15. Motion detection: selects whether to enable motion detection in your video and the detection sensitivity
- 16. Multicast: selects whether to enable server-side multicast streaming
- 17. More settings on the Web: provides the browser-based UI for other settings
- 18. PTZ Settings (Optional for PTZ camera):
- 19. PTZ default: enable or disable the PTZ control on live view.
- 20. PTZ operation mode: select a control method for click and drag on the live view
- 21. Track mode: select the tracking function on live view, for cameras that support smart tracking or smart tracking advanced, please pre-configure the related setting on the camera web first and refer to the Smart Tracking User Guide for details
- 22. Enable track if the camera idles for xx seconds. It is recommended to enable this function while PTZ has tracking tasks in daily operation. Note that manual PTZ control always has a higher priority and will interrupt the tracking.
- 23. Note that if the camera is connected under the ND NVR substation, some functions may not be configurable.

4-5. Settings > Device > Stations

The VSS allows a deployment consisting of multiple VSS instances at different locations. A VSS server can be selected as the CMS (Central Management Server) to manage substations in a hierarchical structure.

Each individual VSS station manages its own surveillance deployments. To build a hierarchy, proceed with the following:

- 1. Open the VSS client on a substation.
- 2. Enter Settings > Stations.
- 3. Enter a TCP Port number if your network configuration requires a different port.
- 4. Select Allow CMS to access this station.
- 5. Click Change password. This password will be used to authenticate the connection between a CMS VSS server and substations.

VSS Pro	۲	\$	+	CPU 3% MEM 85%	۹ 🔳	۹. t	\$ (1)	- 🗆 ×
🔊 Settings				Device management				
Cameras		ch stations Substation		Name SELECT Port 3443 SEL only Model VSS Pro CMS Index CMS to access this station (change password for CMS connection only) Multicast Multicasting of live streams from servers to clients IP Address 239.128.11.99 Port 5000 - 20000				Cancel

- 6. Click the Apply button.
- 7. Open the VSS client on the server chosen as the CMS.
- 8. Click the Add substations button.

9. You can click the **Search** button if the substation is reachable in a local network, or manually enter the IP address and password for making the connection.

IP/C	omain name			
Port		3443	SSL only	
CMS	spassword			
	Windows account Host User name	in substation	(optional)	

10. Enter the password you configured for the Stations configuration, and then click the Authorize button.

VSS Pro	۲	\$	+			CPU 2%	MEM 84%	Q :	i 🌲	101 (1)	- 0	
🔊 Settings				Devic	e manager	nent						
Cameras	Q Search	stations		Add new s	substations	Search					×	
Stations	E S	ubstation		IP/Domain na	me							
DI/DO devices				Port CMS password	3443 d	SSL only						
Data magnet				Add as a	a redundant server for	CMS 🤇	Substations					
External devices									Add	Can	cel	

Click the Apply button for the configuration to take effect.

The substations and their subordinate devices should be immediately listed under the CMS station. You can create separate views to place the substations' cameras.

Device Group	View
Q. Search device(s)	
VMS_Station	
VMS_Station	
CD8371-HNVF2	
🔔 "custom_modelname"	
CD8371-HNVF2	
FD8177-H	
₩ FD8377-HV	

When you want to enlist an NVR into your configuration, please remember to enable the access from VSS server in the NVR's **Service** page.

The connection between VSS and NVR is made via encrypted https.

If the connection port is changed to a non-SSL port, the access from VSS to NVR will fail. For adding the ND series NVR, use port **443**.

*v	VOTEK	•	r 🔹		14:57	43	Ŵ	admin (Log out)
	Overview							
-1	Camera		Service por	80				
	Alarm		HTTPS	443				
			RTSP	554				
	System		CMS & iVie					
i	User		Port	VAST & iViewer	3454			
9	Storage			VAST2 (same as HTTPS)	443			
3	Network	IP	CMS	Set up password for VAST & VAST2				
■	Applications	DDNS		Confirm password				
i	Information	Service		VAST2 remote connection				

Multicasting

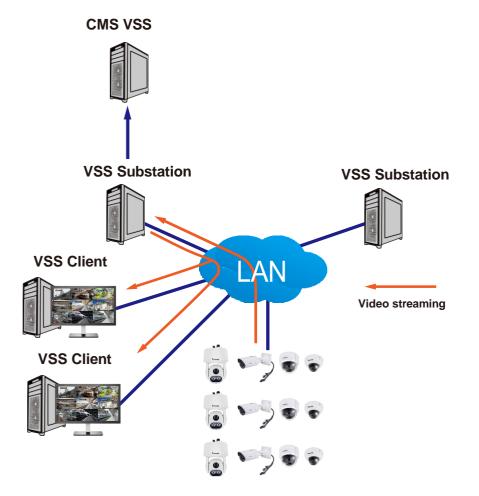
The VSS supports multicasting of live streams from server to clients. If multiple VSS clients demand live videos from the same camera, multicasting can help save considerable system resources.

Multicasting should be enabled on a VSS server and also on individual cameras.

There are prerequisites:

Multicasting is not supported under the following conditions:

- * A CMS local client can only access the live stream from the cameras managed by the CMS server using unicast connections.
- * If the need arises for access to cameras managed by VSS sub-stations, the multicasting configuration should take place on the sub-stations instead of on the CMS server.



* If the streaming connection for a sub-station is configured as CMS Relay, you should configure the multicasting settings on the CMS server.

VSS Pro	۲	\$ + CPU 0% MEM 86% Q III 🖡 🏚 🐠 – 🗆 ×
🔊 Settings		System management
i License D SMTP	Client Station	Language English Export Location C/Users/Public/Documents/
tif Preferences		Society - Control - Contr
		Default logical tree folder Expanded Collapsed Substation streaming connection CMS Relay Direct link Show system warning Insufficient virtual memory Image resampling method Apply

- * To enable multicasting, your network infrastructure must support the IP multicasting standard IGMP (Internet Group Management Protocol). Your server and clients should be on the same network segment.
- * Multicasting is only possible for live streams, not applicable to the recorded video or audio.
- * Multicast streams are not encrypted, even if the recording server uses encryption.
- * The IPv4 multicast address range is: 224.0.0.0 to 239.255.255.255.
- * A layer 2 network switch that supports IGMP is required in the configuration.

To enable Multicasting on a VSS server:

- 1. Enter Settings > Device > Stations.
- 2. Single-click to select a server for which you want to enable the Multicasting.
- 3. Click the checkbox to enable the configuration and enter the multicast address.
- 4. Click the **Apply** button.

Starting the Multicasting service will restart the VSS server.

VSS Pro	$\langle \mathfrak{O} \rangle$	\$	+							9%	MEM 85%	۹ 🛙	Ļ	ţ.	(0)		• ×
🔊 Setting	s				Devi	ice m	nana	agem	ent								
Cameras Stations DI/DO devices Cameras	Q Sear	ch stations Substation		Name Port Model CMS Multi IP Ado Port	344 SSL o VSS F ✓ icast inable mult	Allow CM Chang ticasting of 239.128	ge passwo	reams from	ation CMS connection					Apply	Car	bol	

To enable Multicasting on a camera:

- 1. Enter Settings > Device > Cameras.
- 2. Single-click to select a camera for which you want to enable the Multicasting.
- 3. Click to select the Multicast tab.
- 4. Click the Multicasting slide button.
- 5. Click the **Apply** button.

VSS Pro	Ô	\$	+			CPU 6% MEM 86%	ର ≣	≜ \$\$	(0))	- 🗆 ×
🔊 Settings				Device ma	anagement					
Cameras Cameras Stations DI/DO devices DI/DO devices Data magnet	V 💽 V T T 1 1	h devices MS_Station FD837-HTV FE9382-EHV IB9391-EHT IP9191-HT-v	V-v2 V-v2	Basic Video Image Motion detection Multicast		Multicasting of live s Set up multicast settings f multicasting. Otherwise, it selected on substation str CMS. Server multicast set settings in Stations	for corresponding : will still remain un reaming connection ttings have not be	server in Statio nicasting. Furth n, you will have	ons before turn nermore, if CMS e to set up mult	S relay is ticast on multicast

4-6. Settings > Recording > Recording Options

Click Settings > Recording options. The Recording options window will prompt.

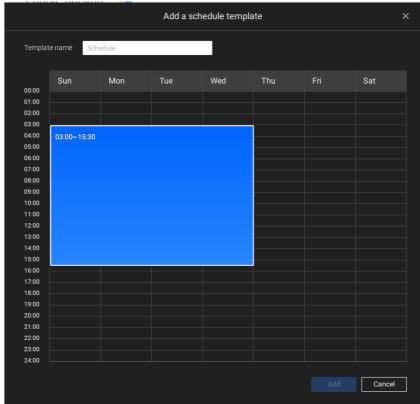
You can configure recording schedules or select the storage options, including the configuration of an external NAS storage. You can designate a recording folder of your choice.

VSS Pro	@ 1	¢x +			2% MEM 87%	Q 🏭 🌲		- 🗆 ×
🔊 Settings			Recording	management				
Recording options	Substatic		Archive name	DefaultGroup	Station 5.92 GB available of 10	Substation 00.1 GB		
Backup	Defa	ultGroup	Storage + Ne	ew storage			Recycle O	ptions
Failover			-					
Local DB			D:\Recordings					
			4 cameras	Select cameras				
			Name	IP	Streaming	Schedule		
			All cameras				Ŧ	
			FD837-HTV	10.66.2.11	1 👻	Continuous	Ŧ	
			IP9191-HT-v2[3.	9-10 10.66.108.121	1 💌	Continuous	•	
			FE9382-EHV-v2	10.42.2.26	2 🔻	Continuous	-	
			IB9391-EHTV-v2	10.66.108.33	3 👻	Continuous	Ψ	
							Apply Ca	ncel

Click on any of the options on the Schedule panel for a recording option: Continuous recordings, Events only, None, or Customize.

4 ca	Meras Select cam	neras				
	Name	IP	Stre	eaming	Schedule	
	All cameras				*	
8	FD837-HTV	10.66.2.11	1	Ŧ	Continuous]
	IP9191-HT-v2[3.9-10	10.66.108.121	1	•	New template	
	FE9382-EHV-v2	10.42.2.26	2	Ŧ	Events only Continuous	
	IB9391-EHTV-v2	10.66.108.33	3	Ŧ	 None	
					Default Schedule	

You can manually create a recording template using the New template + New template button.



Click and hold down on the time cells, and drag the mouse to include the time span of your preference. The minimum selectable unit is half an hour. You can select multiple time spans on the template. Enter a name for the template, and click Add to save your template.

The same configuration window applies to both the Schedule template and the customize schedule windows.

Make sure a Schedule mode is selected when you leave this configuration step.

4-7. Settings > Recording > Backup

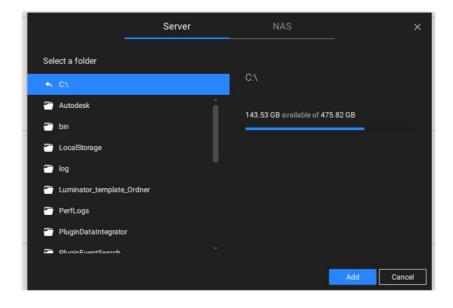
The Backup function allows you to regularly back up the video recordings of one or multiple cameras to local hard disks or a Network Attached Storage device. Currently, the VSS server does not support backup to external storage devices such as a storage devices connected via Fiber Channel. VSS supports backup to an external storage attached through a USB 3.0 connection.

VSS Pro	٨	尊	+	CPU 2% MEM 89% 🔍 🏭 🌲 🏟 📢 – 🗖	×
🔊 Settings				Recording management	
Recording options Recording options Backup Failover Local DB	Camera Mobile NVR (Bl	ETA)		Enable backup Next backup 2024/03/07 00:00:00 Storage • New storage Select backup cameras	
				Schedule Off duty	

Note that the alarms associated with individual cameras will not be backed up.

To enable a backup schedule:

- 1. Enable the backup by selecting the "Enable backup" slide switch.
- 2. Click to add New storage. A configuration window will prompt showing all accessible storage. Click the NAS tab to enable access to a network share.



3. Select the cameras whose videos will be backed up.



4. Select or configure a new schedule template for the backup process to take place. You can select a time when the network load is low, such as the off-office hours, to avoid network congestions.

Enable b	ackup 🔍						
				Off duty			×
00:00	Sun	Mon	Tue	Wed	Thu	Sat	
01:00							
02:00							
03:00							
04:00							
05:00							
06:00							
07:00							
09:00							
10:00							
11:00							
12:00							
13:00							
14:00							
15:00							
16:00 17:00							
17:00							
19:00							
20:00							
21:00							
22:00							
23:00							
24:00							
						Apply Cancel	

5. On the Options pane, you can configure an upper bandwidth threshold (in Megabytes) for the backup operation (for all selected cameras/channels).

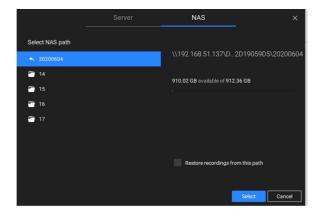
You can select the extension of time, such as starting from how many days ago, of your backup task. You can select to remove old backups when you run short of storage volume.

Options		
Upload limits:	Enable	
	1M 100 M 30	
Backup from:	2 days ago 👻	
Delete old	I backups if there's not enough storage available	
		Apply Cancel

Storage

By default, VSS will check if there is a D: drive. If not, system drive C: will still be defined as the first storage option. Other disk drives in the system and the default storage volume (configured in the initial setup) will be listed.

You can add a NAS storage's shared volumes as the additional storage option. Enter the necessary information for access to a network share. Enter and select a NAS path. The share will then be available for video recording.



Select storage volumes each by a single click.

Click **Ready to use** to continue.

Mobile NVR Wi-Fi Backup (BETA)

This feature allows Mobile NVRs to initiate a backup of specific Alarm recordings upon arriving at a location with a WiFi Access Point (AP) connected to the same domain as the VSS CMS server. Only the System DI-triggered alarm is supported in the current edition.

Here are the setup steps:

To set up VSS Server:

- 1. Add the Mobile NVR to the VSS Server as a substation.
- 2. Navigate to Settings -> Recording -> Backup -> Mobile NVR. Enable backup for Mobile NVR.
- 3. Choose the storage path for the recordings to be backed up.
- 4. Set the duration for recording backups before and after the occurrence of an alarm trigger.

VSS Pro	۵	\$	+		CPU 8% MEM 57%	_ Q Ⅲ	∳ \$ €	- 16 ×
🔊 Settings				Recording management				
Recording options	Camera Mobile NVF	: (BETA)		Enable backup 			Apply	

To set up Mobile NVR:

- 1. Set up the WiFi connection on the Mobile NVR to connect to WiFi Access Points.
- Set up Alarm configurations on the Mobile NVR. Specify the System DI (Digital Input) as the trigger for the Alarm. Specify Video recording as an action for Alarm, including which cameras should start recording.

Once these steps are completed, when the Mobile NVR connects to the WiFi AP in the same domain as the VSS CMS server, the CMS server will establish a connection to the Mobile NVR and transfer the System DI-triggered alarms recording to the VSS server for backup.

4-8. Settings > Recording > Local DB

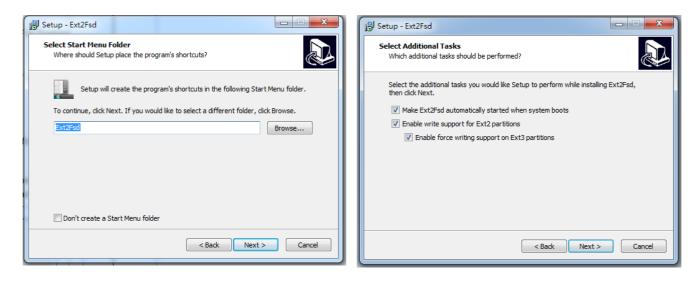
Since some of VIVOTEK's NVRs run on Linux, you have to install the Ext2 File System Driver for Windows to access the recording files from a NVR hard disk.

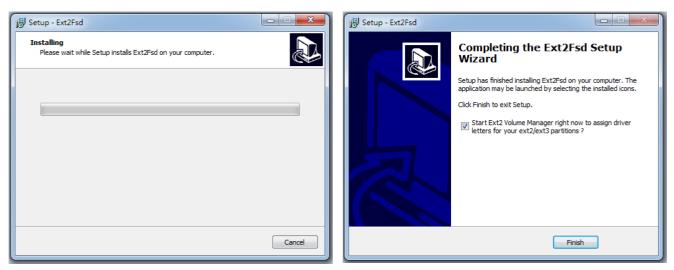
The file system driver can be found here: https://sourceforge.net/projects/ ext2fsd/?source=typ_redirect

Run and install the Ext2fsd-0.xx.exe. Follow the onscreen instructions to complete the installation.



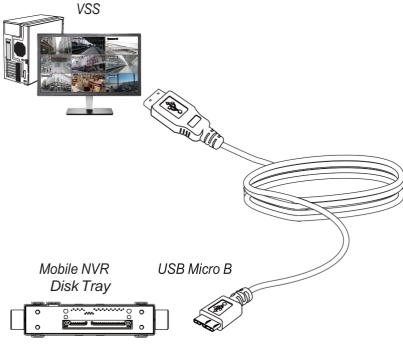
🔂 Setup - Ext2Fsd	🔂 Setup - Ext2Fsd
Select Destination Location Where should Ext2Fsd be installed?	Select Components Which components should be installed?
Setup will install Ext2Fsd into the following folder.	Select the components you want to install; dear the components you do not want to install. Click Next when you are ready to continue.
To continue, click Next. If you would like to select a different folder, click Browse.	☑ Ext2 File System Driver 10.0 MB
At least 10.7 MB of free disk space is required.	Current selection requires at least 10.7 MB of disk space.
<back next=""> Cancel</back>	< Back Next > Cancel





	Tools He	lp					
Volume	Туре	File system	Total size	Used size	Codepage	Physical object	
\$	Basic	RAW	128 MB	128 MB		\Device\HarddiskVolum	ə1
\$	Basic	FAT32	99 MB	99 MB		\Device\HarddiskVolum	э2
🧼 (C:)	Basic	NTFS	916 GB	916 GB		\Device\HarddiskVolum	e3
\$	Basic	NTFS	499 MB	499 MB		\Device\HarddiskVolum	э4
🧼 (D:)	Basic	NTFS	916 GB	916 GB		\Device\HarddiskVolum	ъĘ
\$	Basic	NTFS	29 GB	29 GB		\Device\HarddiskVolum	əЕ
a	Basic	RAW	128 MB	128 MB		\Device\HarddiskVolum	a7
🍋 <u>(6-)</u>	Basic	NTES	1862 GB	1862 GB		\Device\Harddisk\/olum	۶¢
•							*
	Туре	File system	Total size	Used size	Codepage	Partition type	
DISK 0							1
	Basic	RAW	128 MB	128 MB		GPT	
	Basic	FAT32	99 MB	99 MB		GPT	
(C:)	Basic	NTFS	916 GB	916 GB		GPT	
	Basic	NTFS	499 MB	499 MB		GPT	1
(D:)	Basic	NTFS	916 GB	916 GB		GPT	
	Basic	NTFS	29 GB	29 GB		GPT	
DISK 1							l
	Basic	RAW	128 MB	128 MB		Microsoft reserved partiti	
	Basic	NTFS	1862 GB	1862 GB		Basic data partition	

- 1. Remove the disk tray box from a mobile NVR.
- 2. Connect the disk tray box to your VSS server using a USB 3.0 type A to Micro B cable.



- 3. From VSS, enter **Settings** > **Device** > **Local DB**.
- 4. There are 3 import types:
 - 1. NVR disk: the drive tray box removed from a mobile NVR.

2. NVR backup: the recorded videos exported from an NVR using a USB thumb disk or portable drive.

3. VMS/CMS backup: scheduled backup from the local machine. They include: VSS

backups from previous software releases, and scheduled backups.

'SS 📧 🔹 📫 📫				80% Q, III 🖡 🕸 📲
🔊 Settings	Recc	ording management		Camera 04- Line crossing crossing crossing
	Add local DB			
p.	Type O NVR disk 🔘 NVR book	up 🔘 VMS/CMS backup		
	Source			
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	Acer (C)			
	XHR:			

- 5. Taking a mobile NVR's disk drive as an example, click the Source select button to locate the disk drive.
- VSS Pro 8% MEM 89% 0 Ċ. + Recording management 🔊 Settings | **Recording options** Add local DB Q Search devices i - j Backup NVR disk NVR backup VMS/CMS backup Туре - C-Source Failover ĩ
- 7. A Local DB sub-tree will be listed under your server, and you can view the existing recordings on the NVR's disk drive.

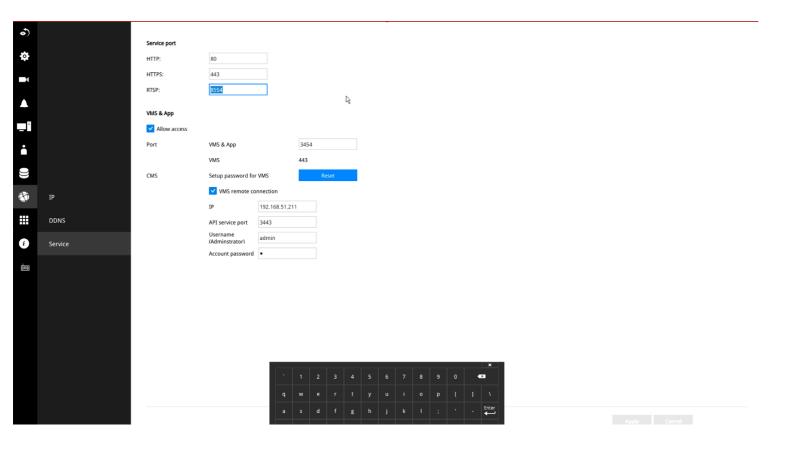
Device Group						Ō
Q Search device	35					
🔻 📆 VMS_Stat	tion					
🔻 👕 Loca	al DB					
× 🗎	NV9411P					
	Camera 01					
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			· • • • • 15:3'2:00			

6. The NVR will be mounted as a local DB.

4-9. Settings > VIVOCloud

If users have an existing VIVOCloud account, they can join their current configuration with VSS, such as an NVR and the cameras managed by it.

The precondition is, you must allow the NVR to be accessed from a VSS server. Open a console to the NVR, and enter IP > Service, to click on Allow access.

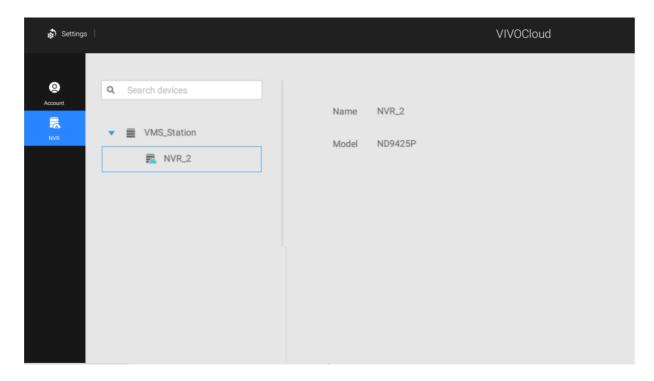


VSS PRO @	\$ 4 +				Trial version	···· 33% ····· 91% · · · · · · · · · · · · · · · · · · ·	- 🕁 ×
	a .		(🔔)	1112		.	
	Device	Recording	Alarm	User	System	VIVOCloud	
	Cameras	Recording options	Add & Delete	Users	License	Account	
	Stations	Backup	Paul & Letitor	Roles	SMTP	N/R	
	DI/DO devices	Fallover			Preferences		
	Data magnet	Local DB			Identity management		
	External devices				Media		
					Feedback and bugs		
	1						
	E-Map	Matrix					
	С-мар	Midula					
	Import & Setup	Matrix management					

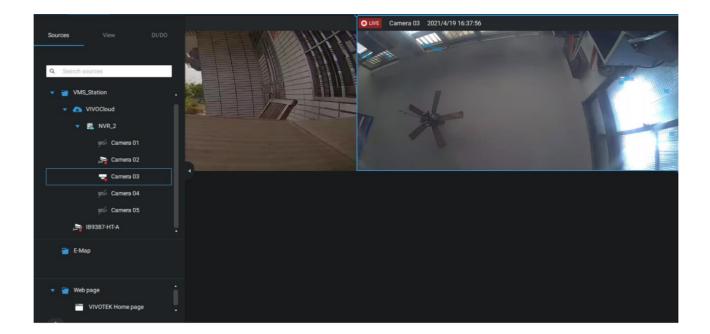
On the VSS client, click Settings > VIVOCloud

Log in using your VIVOCloud credentials.

VIVOCloud	
eric.lu@vivotek.com	
Log in	
New to VIVOCloud? Sign up	



The NVR will be listed under the VIVOCloud device tree.



If the NVR managed through the VIVOCloud is connected via a local or P2P network, the connection should be normal. If the NVR is connected through VIVOCloud Relay, a 28 minute timeout will be imposed, and you can use the connect button to re-connect.

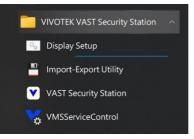
You can encounter this message with connection problems or you did not allow the access from a VSS server. You have to log out your VIVOCloud account and log in again after you solve the above problems.



Appendix A: VSS Service Control Tool

VSS service control tool is a tool for server control and for user to be aware of the VSS Server status. It starts up as Windows OS startup.

Under Microsoft Windows, choose "Start > All Programs > VIVOTEK Security Station > VMServiceControl."



You may also find it in the system tray icon of the tool bar, which indicates that the service is running:

It shows a disconnection icon when the service is stopped:

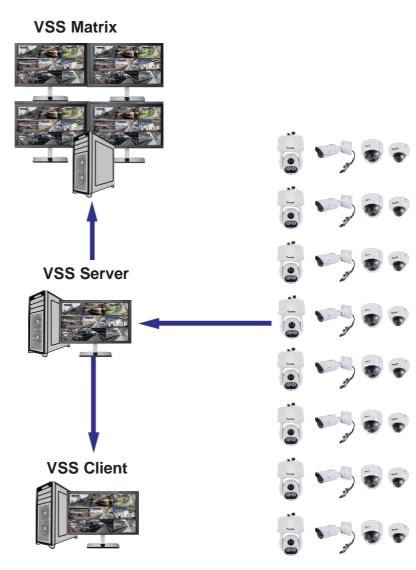
A menu for the service control tool will pop up when you **right-click** on the icon:

Open VAST Service Control	VAST Service C – 🗆 🗙
Start Service Stop Service Restart Service	Service Status Version: 1.0.0.8463 Status: Running
Exit	Start Stop Restart
	Close

Here you can manually start, stop and restart the service.

Appendix B: Matrix

The virtual matrix feature enables the display of any cameras on any monitors in an IP surveillance network. Combinations of live or playback streams can be displayed simultaneously. In addition to pre-configured live views, E-maps, Google maps, and Alarm panes can all be placed on a remote matrix. Users gain real-time awareness of scenes and access to past events.



Prerequisites:

- 1. One VSS server and another computer running the Matrix client utility.
- 2. The first 2 digits of software revision numbers of VSS server and Matrix client must be the same: e.g., 2.3.x.x and 2.3.x.x.
- 3. Sufficient network bandwidth among network cameras, VSS servers, and Matrix clients.

Configuration procedure:

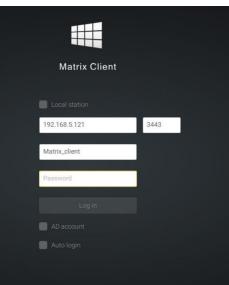
1. Install the Matrix client utility on a computer equipped with multiple monitors. Follow the onscreen instructions to install the utility.

VIVOTEK Matrix Installation	VIVOTEK Matrix Installation
Choose the folder in which to install the Matrix.	Read this license agreement carefully before VINOTEK
v2.1.0.223 Setup will install Matrix in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue. Installation folder C:\Program Files (x86))\VIVOTEK Inc\Matrix Browse	PLEASE READ CAREFULLY: This End-User License Agreement (*EULA') is a legal agreement between VIVOTEK Inc. ('VIVOTEK') as licensor, and you, as licensee, for the VIVOTEK software that accompanies this EULA, which includes remote management software and other applicable software (the "Software"), YOU AGREE TO BE BOUND BY THE TERMS OF THIS EULA BY INSTALLING.
Cancel < Back Next >	COPYING, OR OTHERWISE USING THE SOLA BY INSTALLING, OPYING, OR OTHERWISE USING THE SOLA BY INSTALLING, BUTTON MARKED 'I AGREE' OR 'YES' BELOW. IF YOU DO NOT AGREE. Cancel I Agree
<u>v2.10.223</u>	<u>v2.1.0.22</u>
Installing Matrix client 36%	Install successfully
Cancel	Cancel Done

2. On the VSS server, create a user account for the Matrix client. Depending on the operation on the client computer, assign the client user with adequate operation privileges.

🔊 Settings	i.	User management	
û. Users	Users		
ŵ,	Name	Role	
Roles	admin	Administrator	
	ģ ==	Administrator	
		Add new user	×
		User name AD account 0,	
		Password	
		Confirm password	
		Role Administrator *	
		An administrator has all permissions and is allowed to access all devices.	
		and the second se	Cancel

3. Open the Matrix utility, log in to the VSS server address, using the Matrix client account credentials.



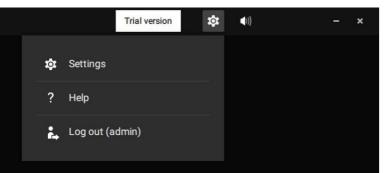
- 4. From the VSS server, open the Settings > Matrix Management window.
- 5. Enter the name of your Matrix client, e.g., Matrix client in the search panel of the Matrix Management window. Note that the Matrix client must have logged in to establish the connection before the VSS server can find it (as previously described).

n Settings	Matrix management
Lesch users or computers	Image: Section A Despheration features to your displays View Tour Dashboard E-Map Alarm Image: View Tour Section A Dashboard E-Map Image: View Image: View Alarm

6. Once the VSS server finds the Matrix client, the available monitors will be listed. Click and drag the pre-configured Views, Tour, Dashboard, E-maps, or Alarm panel to any of the monitors.

V55 Pro \$ @	ασο (+ Τταίντατώσα από 5%, καικ 33%, Ϙ, ΙΙΙ 🌲 🏚 🖈 - α κ
a) Settings	Matrix management
Search users or computers A admin VOPCCALVENTEST VOPCCALVENTEST	<complex-block></complex-block>

- 7. The views should immediately appear on the Matrix monitors.
- 8. If you need to log out, move your mouse cursor to the top of the Matrix client screen to end the session.



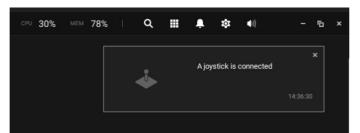
If necessary, change your client settings. Here you can change the displayed language, Export target folder, Start-up option, and the streaming connection options.

	Settings	
System preference		
of the intervention of the	Language English Figlish Cytters/Public/Documents/ Export Location Cytters/Public/Documents/ Snagshot format JP6 PN6 Additional video before alarm trigger 1 mins (1~10) Additional video after alarm trigger 5 mins (1~60)	
	Export clips with Standalone Player On startup Start application on system startup Substation strearning connection O ck/s Reby Direct link	
	Considered Urbot link	

Appendix C: Joystick Support

Configurable joystick buttons

- 1. Connect the joystick's USB cable between the USB ports on the joystick and a VSS server/client.
- 2. Once connected, you should be prompted by a connection message.



- 3. Enter Settings > Device > External devices.
- 4. Single-click to select the detected joystick. The configurable buttons will be listed.
 - Click **b** to expand the Live, Playback, and Common menus.

VSS (PRO)	on \$t ↓ +			Trial version CPU 25% MD	×80% Q ⊞ 🖡 \$\$ 40 - 9
n Settings	I		Device management		A joystick is connected
Cameras Cameras UO U/OO devices Duta magnet 22 Extensi devices	Joystick Network audio Wegand converter	▲ Logitech Extreme 3D	Joystick Assign joystick buttons Teles tense of the settons balow and press a joystick button to assign to Assign joystick buttons Teles Actions Lettons Lettons Lettons Parts	Buttons Buttons Buttons Button 4 Button 4 Button 2 Button 4 Button	

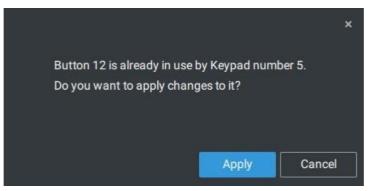
5. To assign or re-assign a button's function, single-click on the button number beside a

function. Click the Delete button 💿. The below message will display.

Stop Press a joystick button

Press a preferred button on your joystick to complete the setting.

If a button conflict occurs, (another function has already been assigned to the same button), the below message will prompt. You can click Cancel or Apply to change the assignment.



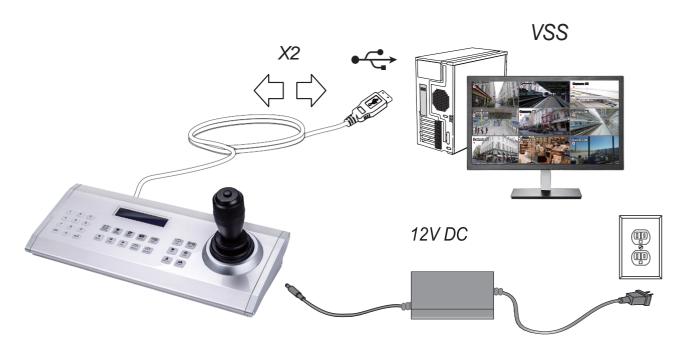
Repeat the above process and click the **Apply** button to preserve your settings.

VIVOTEK's joysticks

The AJ-002 is a USB joystick with HID 3-axis PTZ control, a twist wheel for zoom in/zoom out, and 29 configurable function buttons for use on a VSS server station.

Following are the conditions for making the connection:

- 1. The joystick can either be powered by a DC 12V adaptor or via the USB. If powered by USB, plug the USB cable twice to the USB port to enable USB power.
- 2. Connect the included USB cable between the USB ports on the joystick and a VSS server.

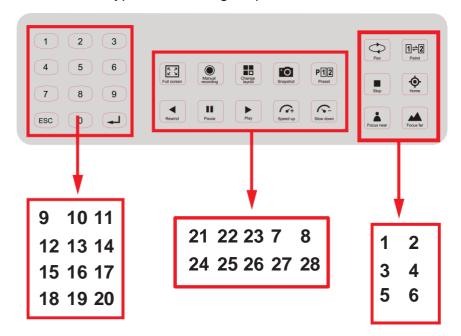


MOTE:

- 1. Avoid spilling water onto the device. Avoid using this device in a high-moisture environment.
- 2. This device should be operated in the indoor environment.
- 3. When the temperature is lower than -10°C, the LCD panel may not function normally.
- 4. If the included power adapter should be replaced, use a 9-15V/1000mA alternative.
- 5. Avoid impact to the device.
- 6. This product is manufactured to comply with the requirements of the following directives: 89/336/EEC, 92/31/EEC, 93/68/EEC.

KEYPAD DEFINITION

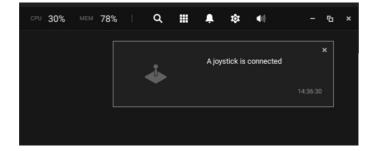
Below is the keypad numbering sequence:



The following keypad functions will be available as the defaults for the joystick.

1	Pan	9	#1	17	#9	25	Pause
2	Patrol	10	#2	18	Cancel/Clear/Esc	26	Play (Playback)
3	Stop	11	#3	19	#0	27	Speed Up
4	Home	12	#4	20	Enter	28	Speed Down
5	Focus Near	13	#5	21	Full Screen		
6	Focus Far	14	#6	22	Manual recording		
7	Snapshot	15	#7	23	Change Layout		
8	Preset	16	#8	24	Rewind		

When a joystick is connected, the VSS server should automatically detect the connection.



The following controls are available:

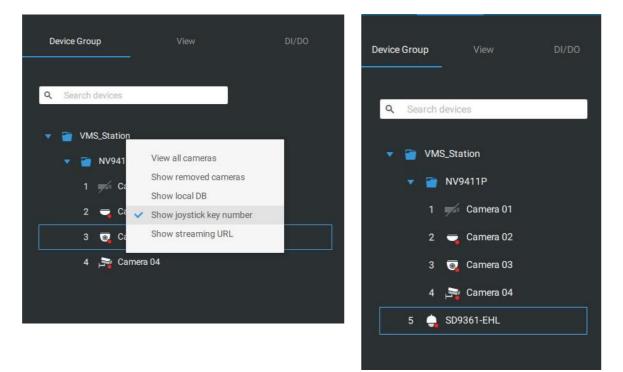
* PTZ control – Basic PTZ control: Direction, Home, Zoom in/out, and Focus near/far.

* Playback control – Play, Pause, Stop, Rewind, Speed up and Slow down.

* View switch – Switch to existing View (Users need to create views first).

Left-click to select your server on the device tree, and right-click to display and select the "**Show joystick key number.**" The camera key numbers are determined by the sequence when the cameras were added to the VSS configuration, and cannot be changed. By default, the key numbers are not shown.

Press the key number on the joystick keypad and the Enter key -, e.g., 5 + -. The full view of the selected camera will display.



Press the ESC key to leave the full view.

To move to a preset position, press the number key + Preset, and the Enter key \checkmark . The number key corresponds to the sequence number for the preset position regardless of the name of the preset.

Note that the RS232/485 terminal connection is currently not supported.

Note that the Manual Recording button is currently not effective.

If you have multiple views, press the number key and the Change Layout, and the Enter key \checkmark to switch to a different view. The number key corresponds to the sequence number for the view you configured regardless of the name of the view (layout).

The Play button toggles the playback window. From here you can trace back the past recordings. You can use speed up, slow down, and rewind buttons here. Once the Playback mode is toggled, the point-in-time defaults to the start of the current hour.



Appendix D: Network Audio Solution

You can add network speakers to your workstation in Settings > External Devices > Network Audio.

- 1. Connect the network speaker to a local network.
- 2. Once connected, enter its IP address, User Name, Password, Port number (default is 5060).
- 3. You can associate one network camera with the speaker.

VSS (200) 🐟 🏟 🖡 🔸		Tripi versi	ion ⊡ 23%, ⊎i# 79%, Q, ⊞ 🌲 \$\$ € - 15 x
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Cameraa Network audio			
Lacura Lacur		Add network audio device Network name Pr/Domain name Definition Por Sectore cancers to pair with this network audio device will be used. Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device of a tank. Image: Sectore cancers to pair with this network audio device at a tank. Image: Sectore cancers to pair with this network audio device at a tank. <th>d when that camera is broadcasting.</th>	d when that camera is broadcasting.

- 4. You can use the Broadcast function on the right of the screen to test the connectivity.
- 5. You can right-click on the live view to find the Broadcast function to speak or broadcast an audio clip.

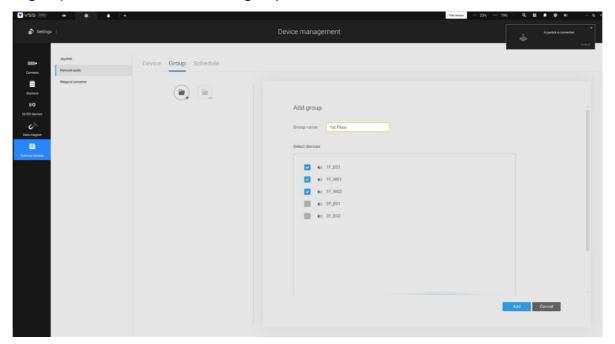
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		 ✓ VMS_Station CC3370-HSV CC3370-HSV S™ IB9367-EHTv2-indoor 	

6. On the occurrence of a triggered alarm (Motion or VCA event), you can configure the alarm settings so that the system can broadcast an audio clip. Configure audio clip settings in System > Media, and select "Play audio file with network audio device" in the Alarm action page.

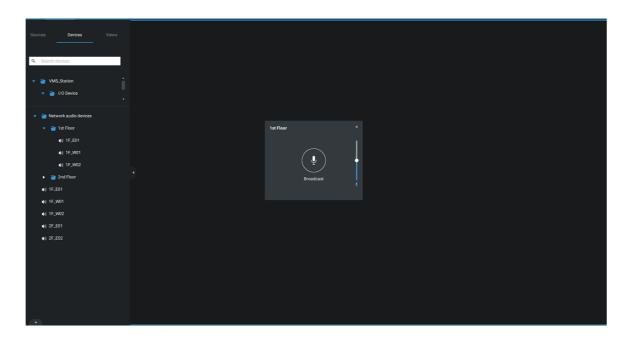
Note that the pre-recorded audio clip should be uploaded from System > Media. The supported audio file is WAV: 8Khz, Mono, 16-bit, PCM.

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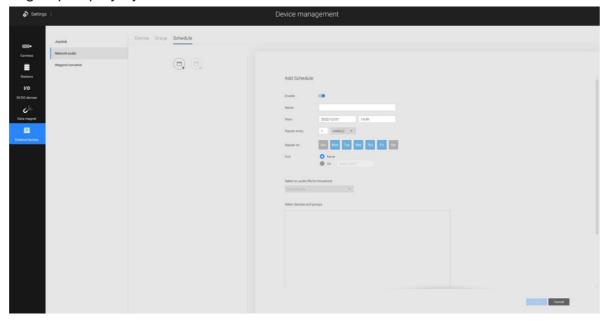
You can create groups for different audio devices. Use the Group tab to create audio groups. Select devices for the group.



With audio groups, you can select audio devices from the Devices tab on a live view so that you can broadcast audios to a group of devices.



You can create a schedule to play a pre-selected audio file. In Network audio > schedule, create a schedule. Select a start time. Select an audio file for broadcast. Select a repeating pattern by hour, by day, or by the week days. You can also specify an audio group to play by the schedule.

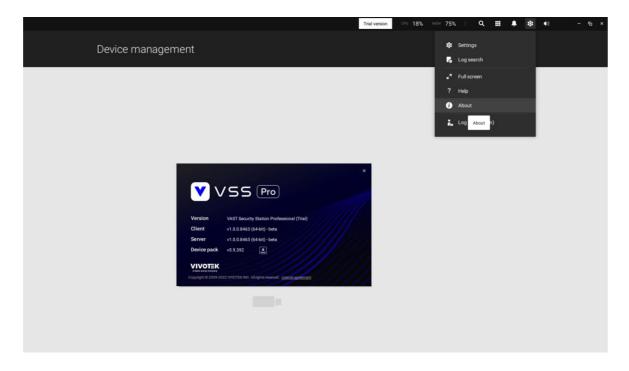




Appendix E: Upload Device Pack

A device pack is constantly updated for the latest profiles of VIVOTEK's new camera/NVR models. If you install new cameras/NVRs to your configuration, you can visit VIVOTEK's website for the latest device pack updates, and upload the pack file to your VSS server. New functional parameters and functions in the new cameras are available through the device pack.

Enter Settings > About to see the upload button.



A device pack file looks like the following.

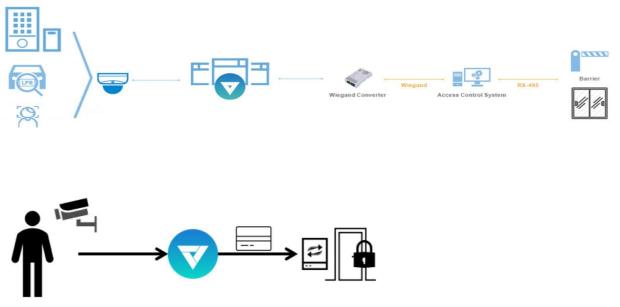
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This PC	13	PicPick 5.0 Portable BY GDaily	6	/24/2018 11:10 PM	File folder
3D Objects		VAST 2.3 announcement	9	/17/2018 2:01 PM	File folder
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Appendix F: Multi-factor Authentication for Access Control

Via multiple data magnet sources, access authentication can be achieved for the following: 1. License plate recognition system, Face recognition system, 3. Access control system.

For example, in a parking lot, if someone wants to leave, the LPR system at the gate will recognize the license plate, and the face recognition will verify the driver's identity. If both recognitions succeed, the gate will open allowing the driver to leave.

In an office, an access control system can be combined with Face recognition mechanism to avoid someone using someone else' card to cheat the attendance system.



The scenario shows one holds an ID card and via the Face recognition system, his identity is verified as one employee in the database. VSS then acquires his ID card serial no., passes it on to an Wiegand converter. The Wiegand converter then passes it to the access control. In addition to the original ID card access control, multiple utilities can be combined into the access control mechanism.

To acquire data from multi-factor systems, we use the Watch list on Data Magnet.

- 1. Depending on your applications, configure multiple data magnet sources, so that data can be transferred and acquired by VSS.
- 2. Click and select Watch list in the Data Magnet window. Click the Add watch list button, and enter a name, e.g., Employee list. Select 2 or 3 pre-configured data sources, and enter the classification you would like to watch for the referential parameter in your Data Magnet json, e.g., name, ID.

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3. Click the Add item button and enter a name and employee ID such as one for an employee. Click Add to finish, and repeat the process for more items.

4. At the lower screen, enter the time threshold for receiving data from multiple sources. For example, If set to 15 seconds, VSS will need to receive within this time the facial recognition and the card ID no. from the access control reader. Both data will be verified and checked against the data on the watch list, e.g., name=Chris, ID=90223.

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- 5. Click on the Rule tab. Click the Add rule button, and then enter a name for the rule. In the Match block, select a Watch list you previously configured. In the Then field, you can configure your rule action. There are 2 actions available:
 - 1. Show hint on the related view cell. 2. Select data to send to Wiegand converter.

If you apply your rule to be an alarm management trigger, you can bypass the Then action settings.

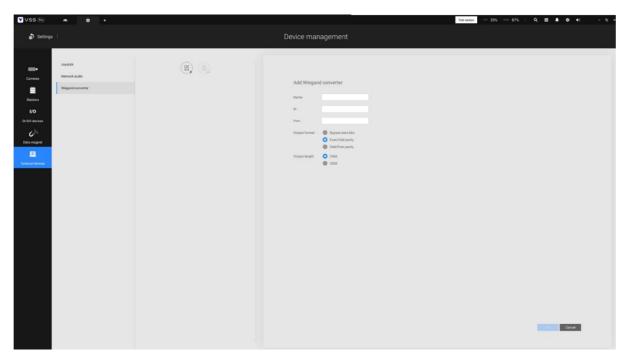
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How to configure "Select data to send to Wiegand converter?"

- VSS has incorporated the support for Wiegand converter AO-20W (https://www.vivotek. com/AO-20W)
- The Wiegand converter can transfer the ID Badge card number through the Wiegand protocol to an access control system. The access control system then decides whether to open a gate or not. The VSS station sends an employee's card number to the Wiegand converter, the Wiegand converter then delivers it to an access control system.
- To Select data to send to Wiegand converter, first select a watch list classification, and then select a Wiegand converter.
- For example, a watch list's employee name=Chris and ID=90223 is verified, you can send the ID card umber to the Wiegand converter. If a watch list's data is not the card number, but the data contains name=Chris, employee ID=90223, you can select "Map data to Wiegand card number." Via the Identity management process, the identity data (such as name) is transferred into a corresponding ID Badge Wiegand card number, and then is sent to a Wiegand converter.

How to add a Wiegand converter to VSS?"

In Settings > External devices > Wiegand Converter, click the add Wiegand converter button. Enter the converter's IP, Port, Output format, and Output length. You can acquire the converter's data via a web console to it.



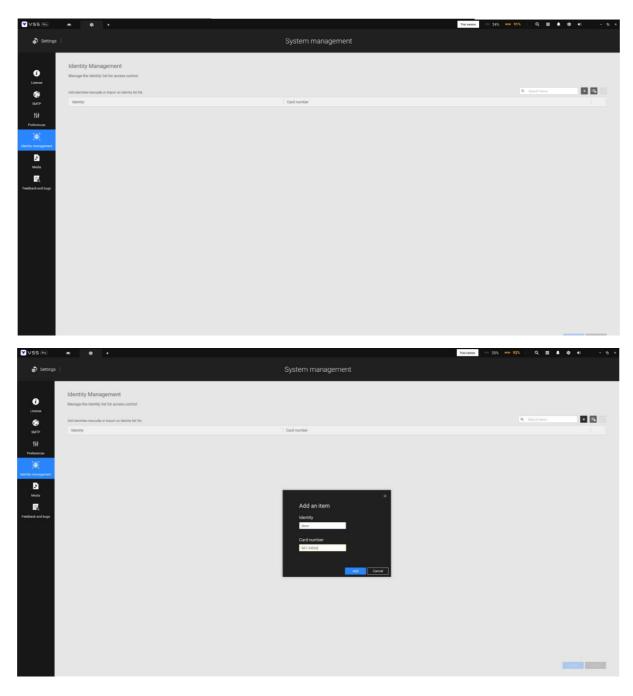
When adding is completed, enter a card number in the Card number field to test if the converter can successfully receive a card number.

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How to configure Identity management?"

In Settings > System > Identity Management, click the add an item button and enter the identity and card number.

Identity is the information such as name or employee ID or car license plate. The Card number is the ID Badge's Wiegand card number.



An identity table should look like this.

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