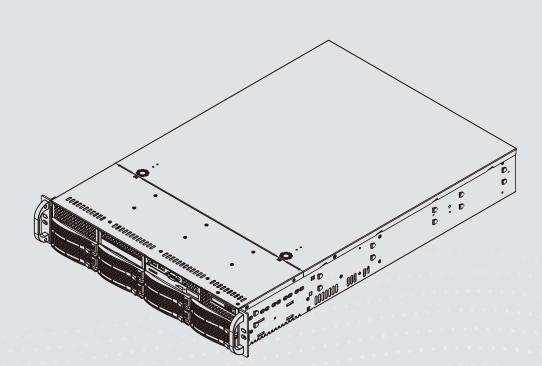


# NR9681 Network Video Recorder USER'S Manual

#### Rack-mount Enclosure • 64-channel Recording • RAID storage • Full Integration with VIVOTEK Cameras



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# **Revision History**

Rev. 1.0: Initial release.

# **WARNING**:

- No storage system is completely fail-safe. Damage to data might occur due to file system corruption, operating system malfunction, virus infection, HDD component failures, and so on. Therefore, it is highly recommended to regularly back up your data, and VIVOTEK disclaims responsibilities of data loss or recovery.
- 2. Always power off the system using the power down button on system desktop. Do not disconnect the power cord while the system is still operating. Doing so will result in data inconsistencies. The normal power-off procedure allows cached data to be written to disks.

# **Read Before Use**

The use of surveillance devices may be prohibited by law in your country. The Network Camera is not only a high-performance web-ready camera but can also be part of a flexible surveillance system. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for its intended use.

It is important to first verify that all contents received are complete according to the Package Contents listed below. Take note of the warnings in the Quick Installation Guide before the Network Camera is installed; then carefully read and follow the instructions in the Installation chapter to avoid damage due to faulty assembly and installation. This also ensures the product is used properly as intended.

The Network Camera is a network device and its use should be straightforward for those who have basic networking knowledge. It is designed for various applications including video sharing, general security/surveillance, etc. The Configuration chapter suggests ways to best utilize the Network Camera and ensure proper operations. For creative and professional developers, the URL Commands of the Network Camera section serves as a helpful reference to customizing existing homepages or integrating with the current web server.



The operating system and management software are installed on a flash memory mounted on the main board. Except for the plug-ins for onscreen display, there is no need to install software.

# **Package Contents**

- NR9681
- Power cords
- Software CD
- Warranty Card
- Quick Installation Guide
- Screws and slide rails

# Symbols and Statements in this Document



**INFORMATION:** provides important messages or advices that might help prevent inconvenient or problem situations.

**NOTE**: Notices provide guidance or advices that are related to the functional integrity of the machine.

**Tips**: Tips are useful information that helps enhance or facilitae an installation, function, or process.

**WARNING!** or **IMPORTANT**: These statements indicate situations that can be dangerous or hazardous to the machine or you.

**Electrical Hazard**: This statement appears when high voltage electrical hazards might occur to an operator.

# Chapter One Hardware Installation and Initial Configuration

# Introducing NR9681 Network Video Recorder

NR9681 is the latest 64-channel H.265, RAID-protected NVR from VIVOTEK, bringing stable and efficient system operation under a wide range of recording/network management/system settings. The unit supports all VIVOTEK camera models, including the latest 5-Megapixel and fisheye cameras. The support for RAID 1/6/6/10 provides data security in the event of disk drive failure.

The unit is equipped with two gigabit Ethernet RJ45 ports which provide network failover functionality to avoid the risk of recording loss. When one network line is disconnected, the system will shift to the other network automatically, providing continuous access for video data. Up to 8 HDDs can be installed in the NR9681 for a total storage capacity of up to 48TB (6TB max. each). Eight removable HDD trays are available in the front of the unit, with hot-swap functionality for easy replacement.

A VAST CMS server runs on the machine that manages surveillance recording and playback. The compatibility with the iViewer application allows for remote access to the NR9681 on handheld devices. By integrating all of the components together using VIVOTEK's NR9681, network cameras, VAST, and iViewer software, users can realize a fully-featured and robust next-generation surveillance system. This ingenious NVR also features the remote management capability with a full range of server/client structures and thus is capable for robust and diverse applications.

#### **Special Features**

- Runs on embedded Windows
- 2U Rack Mount Design
- RAID 0, 1, 5, 6, 10, 50, 60 in virtual drive storage configurations
- 8 x HDD Tray, for a max. capacity of 48TB
- 2 x Gigabit RJ45 Ethernet ports
- 8 x USB Port (2 x Front / 6 x Back)
- Size: 437 mm (W) x 648 mm (D) x 89 mm (H)
- 64-CH Live View & 16-CH Synchronous Playback
- H.265/H.264/ MPEG-4
- PTZ Support
- Snapshot / Export Media
- PiP Video Control
- Bookmark Design
- Fast Configuration Backup / Restore
- Pre-installed VIVOTEK VAST Central Management Software\*
- Full Integration with VIVOTEK Network Cameras
- VIVOTEK iViewer Support (iOS/Android)

# Safety

- Connect the system to an earthed main power outlet.
- Never open the housing of the power supply unit.
- Install and operate the system only in a dry, weather-proof location.
- Observe the following safety factors:
  - Is there visible damage to the system or power cord
  - Is the system operating correctly.
  - · Has the system been exposed to rain or moisture
  - Has the system been in a long storage under harsh conditions or exposed to unconforming stress.
- The relevant electrical engineering regulations must be complied with at all times during installation.
- Ensure that all maintenance and repair work is handled by qualified personnel such as electrical engineers or network specialists.
- Read this manual before installing or operating the system. The documentation contains important safety instructions about permitted uses.
- The rated AC input is: 100-240V, 11-3.5A, 60-50Hz; the max. output power: 740W.
- If a fault occurs, disconnect the power cord from the power supply.
- Do not install the system close to heaters or other heat sources. Avoid locations with direct sunlight.
- All ventilation openings must be not be blocked.
- Use only the cables shipped with system or use appropriate cables that can withstand electromagnetic interference.

# **Installation Instructions**



#### Warning:

Read the installation instructions before connecting the system to the power source.



#### Warning:

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250V, 20 A.



#### Warning:

The system must be disconnected from all sources of power and the power cord.removed from the power supply module(s) before accessing the chassis interior to install or remove system components.



#### Warning:

Only trained and qualifiedpersonnel should be allowed to install, replace, or service this equipment.



#### Warning:

This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).



#### Warning:

There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



#### Warning:

This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.



#### Warning:

Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.



# Warning:

Installation of the equipment must comply with local and national electrical codes.



#### Warning:

Ultimate disposal of this product should be handled according to all national laws and regulations.



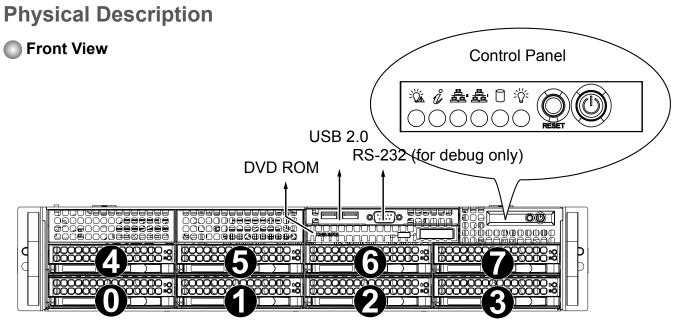
#### Warning:

The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.



#### Warning:

When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire.Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the code) for any other electrical devices than products designated by the manufacturer only.



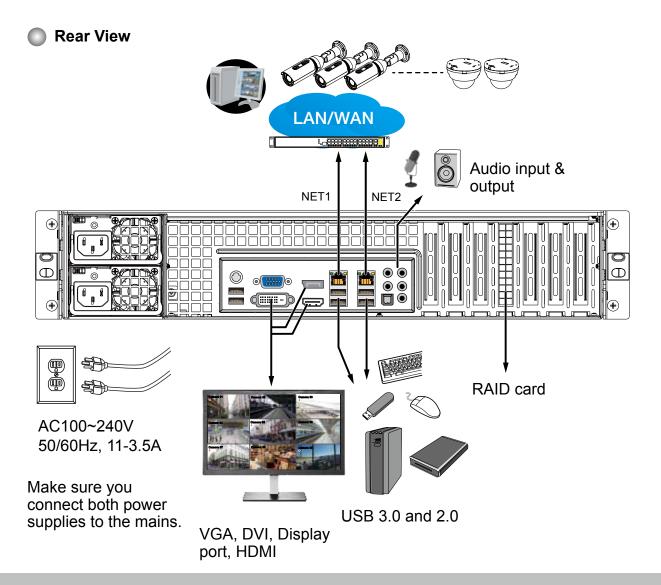
Drive bay numbering sequence

Control Pa	Control Panel buttons and LEDs			
	Power failure LED	Flashes to indicate a power failure.		
0	Status LED	Status	Description	
Ũ		Constant on and red	An overheat condition. (e.g., by cable congestion)	
		Blinking red (1 Hz)	Fan failure: check for an inoperable fan.	
		Blinking red (0.25 Hz)	Power failure: check for an inoperative power supply.	
		Solide blue	Local UID has been activated. Use this button to locate the server in a rack environment.	
		Blinking blue (300 msec)	Remote UID has been activated. Use this button to locate the server from a remote site.	
	NIC2	Indicates network activity on GLAN2 when flashing.		
	NIC1	Indicates network activity on GLAN1 when flashing.		
	HDD	Indicates activity on the SAS/SATA drives, and/or DVD-ROM activity when flashing.		
	Power	Indicates power is being supplied to the system power supply units. This LED should normally be lit when the system is operating.		

Control P	Control Panel buttons and LEDs				
RESET	Reset	This button is used to reboot the system.			
	Power	The main power switch is used to apply or remove power from the power supplies to the server. Turning off system power using this button removes the main power but keeps standby power supplied to the system. You must unplug the system before servicing components inside the chassis.			

Drive Tray LEDs	
Green	When lit, indicates drive activity. Blinking indicates the drive is being accessed.
Red	Red indicates a SAS/SATA drive failure.

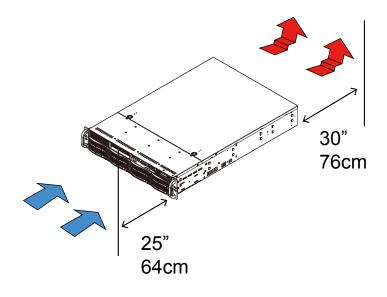
0: 00000000000000000000000000000000000	-
	ļ



# MIMPORTANT:

It is important to leave a clearance of 76cm to the rear side of the chassis. The clearance is required to ensure an adequate airflow through the chassis to ventilate heat. A 64cm clearance is also required on the front of the chassis.

To ensure normal operation, maintain ambient airflow. Do not block the airflow around chassis such as placing the system in a closed cabinet.



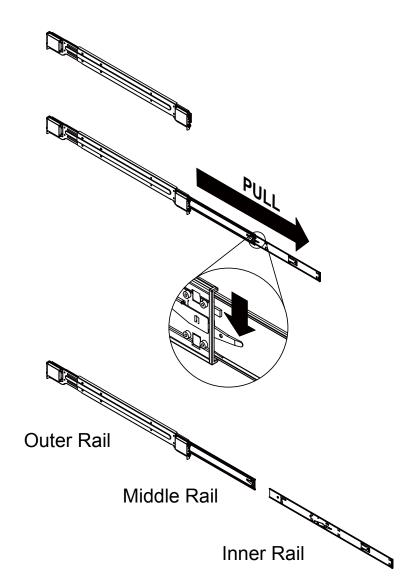
# **Rack-mounting**

# 

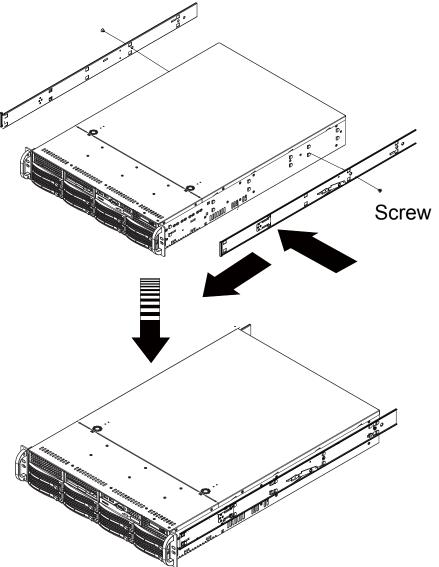
If you have either a round-holed or square-holed rack, install cage nuts or clip nuts to the desired positions on the rack posts.

The instructions below are based on the installation to a 4-post equipment rack.

1. Remove the inner rails from the slide rail assembly. Pull the inner rail out of the assembly untill it is fully extended and press the retention tab to release the inner rail.

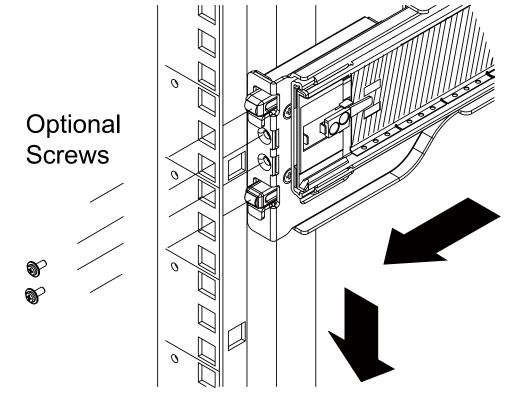


2. Secure the inner rails to the sides of the chassis using the included screws. Slide the inner rails forward until they are locked into position. Secure the inner rails each with a screw.

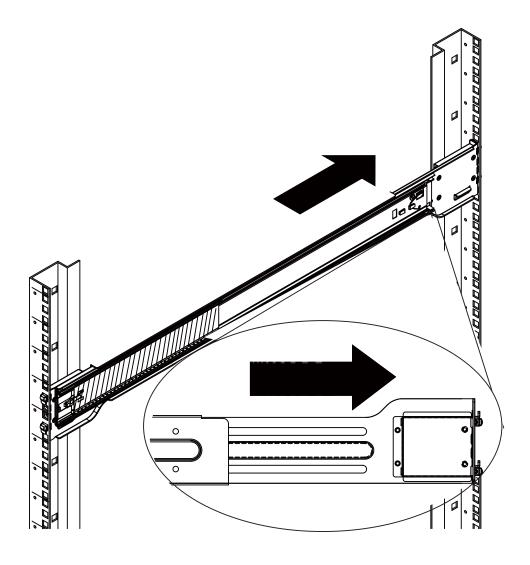


- 3. Press the locking tab and push the middle rail back into the slide rail assembly.

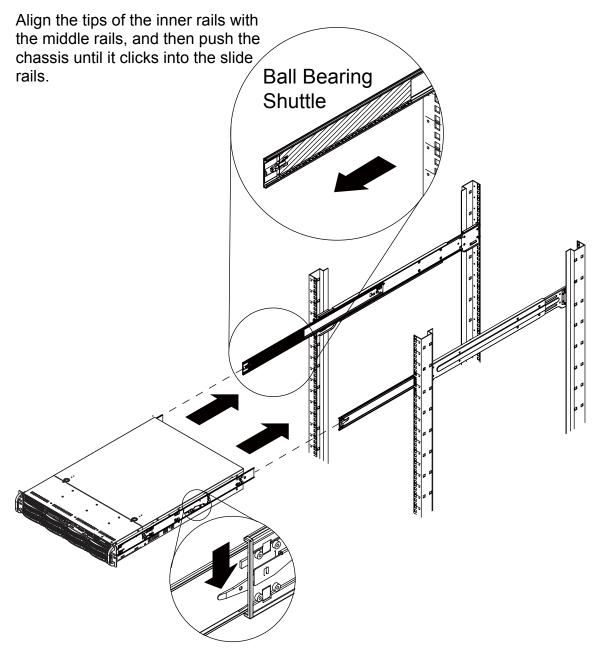
4. Attach the slide rails to the front rack post by hanging them to the rack holes. You may secure them with screws.



5. Extend the rails as necessary, and repeat the previous step to hang the slide rails to four rack posts.

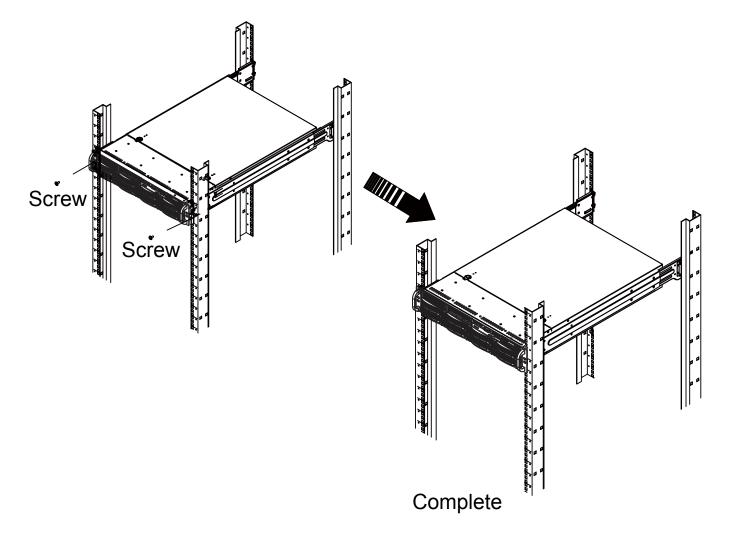


6. Pull the middle rail out of the front end, and make sure the ball bearing shuttle is locked at the front of the middle rail.



Press the locking tabs on both sides of the chassis simultaneously and push the chassis into the rack cabinet.

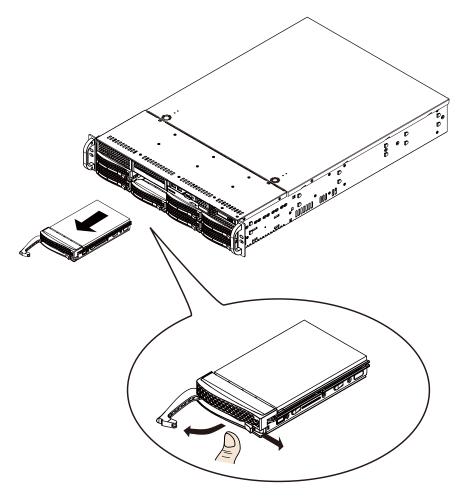
7. If additional security is required, secure the chassis handles to the front rack posts (optional).



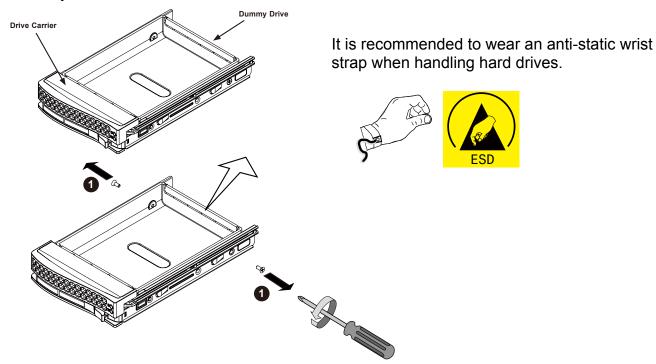
# **Installing Hard Disk Drives**



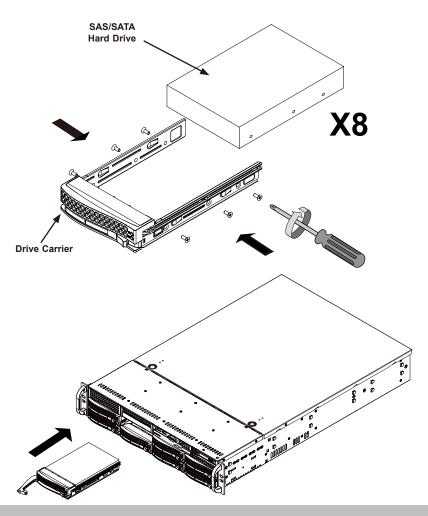
- Refer to VIVOTEK's website for the hard disk compatibility information.
- Avoid touching the hard drive's circuit board or connector pins. Doing so can damage the hard drive by electro-static discharge.
- 1. Remove drive trays from the chassis. Push the release tab to the side, the tray lever will pop out. Pull the lever to remove drive trays.



2. Use a Phillips screwdriver to remove screws from the side and then remove the plastic Dummy Drive.



3. Install hard drives by driving screws from the sides. When done, gently install the drive trays into the chassis.



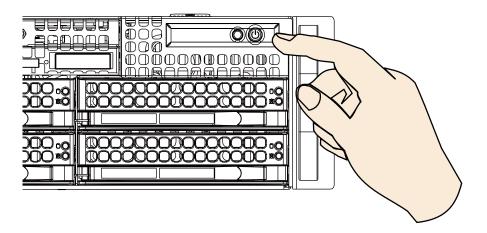
# **Connecting Interfaces**

Refer to page 15 for the interface connections.

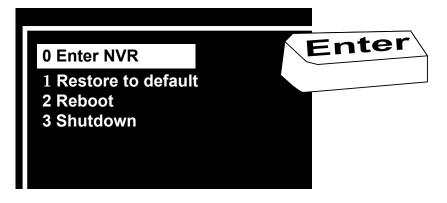
- 1. Make sure all cameras have been properly installed, either they are powered by 12V power lines or using one or several PoE switches. Refer to the cameras' documentation for details.
- 2. Connect all other interfaces to USB mouse/keyboard, one or two monitors, and audio input/ output devices.
- 3. Make sure you connect both power supplies to power mains.

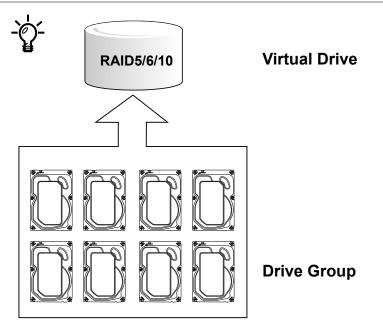
# **Initial Configuration**

1. Power up the system by pressing the power on button.



2. Skip the BIOS screens and select **Enter NVR** at the selection screen. The system will start. Wait for the start-up process to complete.

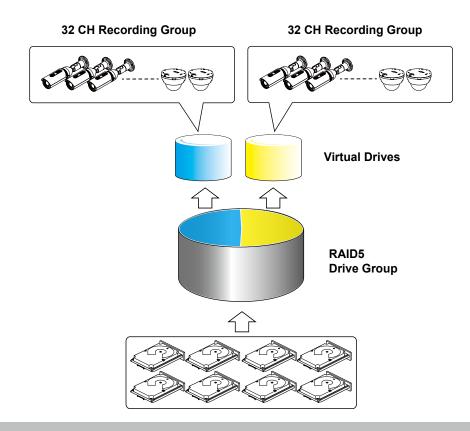




All hard drives will be combined into one or more drive groups, and the capacities of these drive drive will be utilized to form one or more virtual drives. The video feeds from the network cameras will be recorded to the virtual drive(s).

Recording will not take place unless you create a virtual drive first. You can select RAID5, RAID6, or RAID10 as the RAID level during the configuration process.

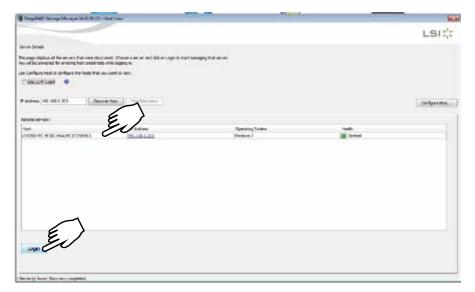
If you have the maximum of 64 channels, it is recommended you create a RAID5 drive group consisting of 8 hard drives. You then create two Virtual Drives, with 32 cameras configured into a Recording Group and a Virtual Drive assigned to each Recording Group. As shown below, try divide the work load into two Virtual Drives when you have more than 32 channels.



1. The system will boot up to the system main screen. Double-click on the **RAID Config** shortcut to start the MegaRAID storage configuration utility.



2. Select the default server, namely, the Windows 7 server running on this machine. Click Login to begin your configuration.



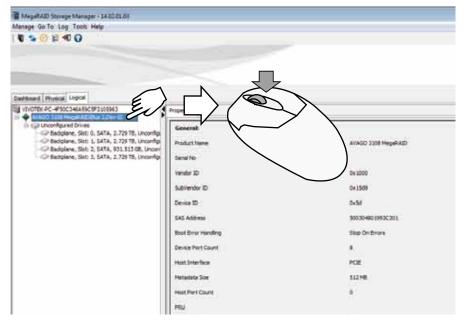
3. Enter **VIVOTEK** as the User Name. By default, there is no preset password. Click Login to proceed.

🛢 Enter User Name 8	& Password	<b>×</b>
		LSI 🔭
Server :	192.168.6.203	~
	Use your Operating System and password to login the	vername 🕜
User Name:	VIVOTEK	
Password:		
Login Mode:	Full Access	
	Login Cancel	

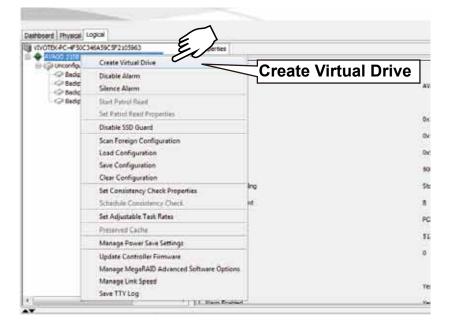
4. A Dashboard view will appear. Click the Logical tab.

MagailAID Steep	je Manager - 140.	10103			
Manage lio to Log	Tosts Help				
	0				
Charboart Rosical	1000	a 2,0ev ()			
Properties			Usage		Background Operators
🔶 statuli Kji Erchaurys:	Citation (	·			firtual drive operations in progress: 3
Distributes	i		4000	Total capacity: a cas te	
GP Drives:				Configured Capacity:	Drive sperations in progress: (
Drive grades:	2				
Visual Drive(s)	0		100%	<ul> <li>Inconfigured Capacitet 8.089 TB</li> </ul>	those anticles
ReptAD Aliances	Suffrant Cyclore		Adam		rely
HegeRAD FestPath		Enabled	Oranta unitadi di uni		How No Less MIDH1
Hepstall KADS		Enabled.	Create Cadre Cade ** : 5	SID Cathing	How to create virtual date?"
Hegal(AD 6ADS		Evaluat	Land in Ascelar		How is marine Mean AC All around Self-
Harrisot Minual (AD)	Ad-anotal Softward	Octor of Control of Co	Gardens Revenues		Gase 2
			18cot.abca		
10.00	r Lavel	Gate / Time		Description	
41 (316)	rmaton, 0] rmaton, 0] rmaton, 0]	2016-01-09, 821 2016-01-09, 821 21 seconds from	42:26	buccessful log on to the Controller IDs - 8 Time	e serve User: 17/07bX, Clerk: 012,188.4.203. established since power wit: Time: 30.36-61-09, 1 oler operating temperature within normal range, fi

5. Left-click to select the AVAGO MegaRAID controller, and then right-click to display a command menu.



6. Click on Create Virtual Drive.



7. The **Create Virtual Drive** wizard will start. Click to select the **Advanced** mode. Then click the Next button to proceed.

Create Virtual Drive - Choose mode	<b>X</b>
	LSI ╠
This wizard will help you quickly create virtual drives.	
Choose how to create the virtual drive:	
© Simple	
Specify a limited number of settings and have the system pick drives for you. This is the easiest way to o virtual drive	reate a
Advanced Choose additional settings and customize virtual drive creation. This option provides greater flexibility wh	en creating
virtual drives for your specific requirements.	ich di calang
	_
	E
Cancel	Next Help

8. Select a **RAID level**, and then select multiple disk drives as the members of your drive group. Left-click to select a disk drive, and click **Add** to add it to group. You do not need to select the Data protection option.

Create Drive Group - Drive Group Settings	x
Create the drive group by specifying the RAID	rive security method.
RAID 5	This RAID level is suitable for multi-user environments(database or file system) with large IO size and high proportion of read activity.
Drive security method: Select	Drive security will make the virtual drive secure by applying encryption logic to underlying data in the drive.
Data protection: Disable	Data Protection is a guard that detects corruption of data on media; thereby preventi system errors caused by silent data corruption (SDC).
Select unconfigured drive Drive Backplane (252), Slot: 0 SATA 2,729	Add > Drive groups: Drive groups: Prive groups: Drive groups:
Backplane (252), Slot: 1 SATA 2.729      Backplane (252), Slot 3 SATA 2.729     Backplane (252), Slot 3 SATA 2.729     III →	Add Hot Spare >
	Create Drive Group Create Span
	Cancel Back Next Help

Refer to the next section: **RAID Basics** on page 41, for details about RAID levels.

9. Click on the Drive Group 0 entry you have just configured. The **Create Drive Group** button will become available. Click Next to proceed.

Create Drive Group	p - Drive Group Set	tings			
					LSI
reate the drive group AID level:	by specifying the R	AID level and [	Drive security method.		
RAID 5			This RAID level is suitabl or file system) with large		n (m) (m)
rive security method:					AN DIN D
Gelect		-	Drive security will make t underlying data in the dr		
ata protection:					
Disable		-	Data Protection is a guar system errors caused by		
Select unconfigured	drives: Type	Capa			,DEV 0)
			Add >	Backplane (252), Slot:	0. SATA: 2 7 E
			Add Hot Spare >	Backplane (252), Slot:	
			< Remove	Backplane (252), Slot:	2: SATA: 931 👻
•	11	4			4
				Create Drive Group	Create Span
				Cancel Back	Next Help

#### 9. Select the following key parameters: Strip size: **64KB**, RAID policy: **No Read Ahead**, Write policy: **Always Write Back**.

These are important parameters to the disk array performance, and have to be correctly configured. Click **Create Virtual Drive**.

3 Create Virtual Dri	ive - Virtual drive settings		×
			LSI 🎇
Specify parameters f	or the new virtual drive.	Drive groups:	
Virtual drive name:	VD_0	AVAGO 3108 MegaRAID(Bus 2,Dev 0)	tity: 2.728 TB
Capacity:	2.728 - Units: TB -		
Initialization state:	No Initialization 👻		
Strip size:	64KB -	54 KB	
Read policy:	No Read Ahead	No Read Ahead	
Write policy:	Always Write Back 👻	Always Write Bac	:k
I/O policy:	Direct IO 👻		
Access policy:	Read Write 👻		
Disk cache policy:	Disabled	.>	
Update Virtual Dr	rive Create Virtual Drive	Remove Virtual Drive	
		Cancel Back	Next Help

#### 10. Click **Yes** to leave the Write Back concern message.

Always V	Vrite Back Selected
	Always Write Back mode provides optimal performance, but data loss will occur if there is a power failure and no cache battery installed or the battery is failed or discharged.
	Are you sure you want to select Always Write Back mode?
	Yes No

11. The wizard may prompt for another virtual drive. Multiple virtual drives can be created from a physical drive group. Since we only need one virtual drive in this configuration, click to select the **Virtual Drive 0,VD\_0**, and then click Next to proceed.

🛢 Create Virtual Drive	e - Virtual drive settings	· · · · · · · · · · · · · · · · · · ·	×
			LSI 🔭
Capacity: Initialization state: [ Strip size: [ Read policy: [ Write policy: [ I/O policy: [	r the new virtual drive. VD_0 2.728 Units: TB No Initialization 64 KB No Read Ahead Always Write Back Direct IO Read Write	Drive groups: AVAGO 3108 MegaRAID(Bus 2,Dev 0) Drive Group0: RAID 5: Available Virtual Drive 0,VD_0:2.72	r: 0 Bytes
Disk cache policy:	Disabled 👻		
Update Virtual Driv	Create Virtual Drive	Remove Virtual Drive Cancel Back	Nex Help

12. The virtual drive is instantly created. Click **OK**, and then click **Finish** to close the wizard. You can then terminate the MegaRAID utility.

Review the summary and go b	ck if you need to make corrections. The virtual drive(s) will be created	ited when you click finish.
Cummary: Drive group name: RNID Level: Number of drives used: Drive security method: Data Protection: Hot Spare Total capacity: Virtual drive 1 name: Capacity:	Drive Group0 PAID 5 4 Create Virtual Drive - complete The virtual drive(s) successfully created.	

13. Double-click on the **Disk Management** shortcut on the desktop to open the utility.



14. The virtual drive you created should appear as a new disk partition. You need to initialize and format the partition before using the disk capacity. Left-click to select and then right-click to display the command menu. Click **Initialize Disk** to proceed.

Colume Col (Col (Dol)	Layout Simple Simple Simple	Type Basic Basic Basic	File System FAT32 NTFS FAT	Status Healthy (A., Healthy (S., Healthy (P.,	40.62 GB	Free Spa 8:30 GB 45:34 GB 8:13 MB	5.Free 81 N 82 N 43 N	Fault Tolerance No No No	0% 0% 0% 0%
ERDisk 0 Basic 59.63 GB Online	20.00 GB FAT3. Healthy (Activ		utition)		2 GB NTFS	oct, Primary Part	ition)		
Ferrovable 1.87 GB Online	(Do 1.87 GB FAT Healthy (Primu	É	7				E	7	
ERDiak 2 Basic SSB8.00 GB Online	2048.00 GB Unallocated	E			Initializ Offline Detach		E		
		y -		,	ropert	ies	1		

15. Select **GPT** (GUID Partition Table), and then click **OK** to proceed. This window may automatically pop up when Disk Management is started.

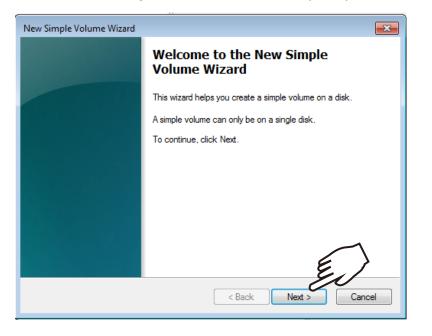
Initialize Disk	×
You must initialize a disk before Logical Disk Manager can access it.	
Select disks:	
Disk 2	
Use the ing partition style for the selected disks:	
C Master Boot Record)	
GPT (GUID Partition Table)	
Note: The GPT partition style is not recognized by all previous versions of Windows. It is recommended for disks larger than 2TB, or disk	
Windows. It is recommended for disks larger than 21B, or disk for disk for disks larger than 21B.	
OK Cancel	

16. Once initialized, you can create a new volume. Right-click to display the **New Simple Volume** command. Click to proceed.

📼 Disk 0		
Basic 59.63 GB Online	10.00 GB FAT32 Healthy (Active, Primary Partition)	(C:) 49.62 GB NTFS Healthy (System, Boot, Primary Partition)
<b>Disk 1</b> Removable	(D;)	
1.87 GB Online	1.87 GB FAT Healthy (Primary Partition)	
Disk 2		
Basic 5588.00 GB Online	2048.00 GB Unallocated	E
		New Simple Volume
		New Spanned Volume
		New Striped Volume
		New Mirrored Volume
		New RAID-5 Volume
		Properties
		Help

\_\_\_\_\_

17. The New Simple Volume Wizard will prompt. Click Next to proceed.



18. Leave the volume size unchanged. Click Next to proceed.

New Simple Volume Wizard	
Specify Volume Size Choose a volume size that is between the	maximum and minimum sizes.
Maximum disk space in MB: Minimum disk space in MB: Simple volume size in MB:	5721982 8 5721982
	< Back Next > Cancel

19. On the **Format Partition** page, select the **Allocation unit size** as **64KB**. When done, click Next to proceed.

New Simple Volume Wizard	<b>—</b> ×
Format Partition To store data on this partition, you must format it first.	
Choose whether you want to format this volume, and if so, what settings you want to use	e.
Do not format this volume	
Format this volume with the following settings:	
File system: NTFS -	
Allocation unit size: Default  Volume label: 512	
Perform a quick format Enable file and folder cor 81924 2048 4096	
16K	
64 KB	
< Back Next > Cano	;el
(hu)	
2	>
	r

20. Click Finish to end the wizard.

New Simple Volume Wizard		×
	Completing the New Simple Volume Wizard	
	You have successfully completed the New Simple Volume Wizard. You selected the following settings: Volume type: Simple Volume Disk selected: Disk 2 Volume size: 5721982 MB Drive letter or path: E: File system: NTFS Allocation unit size: Default	
	Volume label: New Volume Ouick format: Yes To close this wizard, click Finish.	]
< Back Finish Cancel		

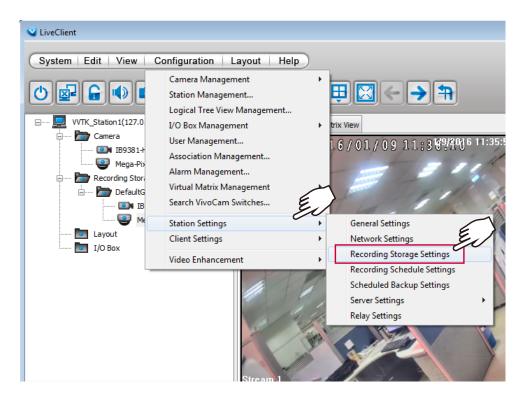
21. The formatting process will run in the background. When done, the new volume shall be indicated as a healthy new volume. Close the Disk Management window.

Online	(D:) 1.87 GB FAT Healthy (Primary Partition) (D:) 1.87 GB FAT Healthy (Primary Partition)				
Disk 1 Removable 1.87 GB Online					
Disk 2 Basic 5587.88 GB Online	5587.87 GB Formatting				
Disk 1					
Removable 1.87 GB Online	(D:) 1.87 GB FAT Healthy (Primary Partition)				
Disk 2					
Basic 5587.88 GB Online	New Volume (E:) 5587.87 GB NTFS Healthy (Primary Partition)				

22. Start VIVOTEK **LiveClient** utility by double-clicking its shortbut. Enter **admin** and **admin** as the User Name and default Password. You can change the password later in the utility. Click Log in to proceed.

VIVOTEK	Control Center	Disk Status	Network Status	System Status	
	X2				
LiveClent	Payback		Service	Import / Export Utilty	
$\bigcirc$		VAST Live		<b></b>	
Shepherd	Fie Manag	Address:	127.0.0.1		
69	×	Authentication User Name:	admin	admir	
Control	Disk Managen	Password:	•••••	admir	1
		Log in	Cancel	More >>	

23. Click Configuration > Station Settings > Recording Storage Settings.



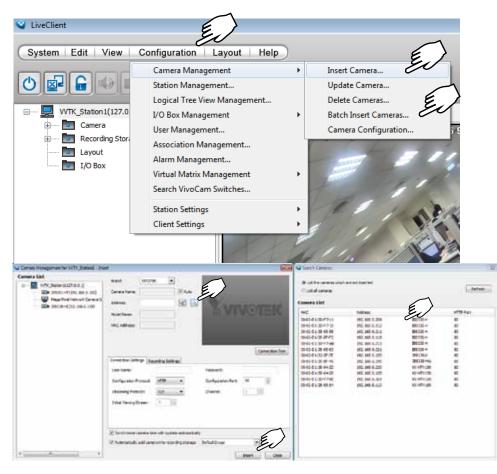
24. Click on the **Add Local Path** button. Select the new local path displayed as D:/ or E:/ drive (your new volume). Click OK to proceed.

Recording Storage Setting	s for VVT	K Station1		12
Storage Gr faultin	sup	• 🚯 🖉 🕱		
atu in 35 / no 27 28 18 19	₿.	- tetta vana tana		
Recovery Storage Path	1	0.0	Storage Information	
	1	Select Local Path	Total:	GByte
		B vvik jistoni B C\ I		GByter
Delete recorded data older f ameras in Storage Group Available Cameras:	than			-
Name	Add			
199381-H7 Mega-Pixel Network Camera	192. 192.			
		Add Delete Rename		
		Path: E:\		
		Type: Storage Path Recovery Path Storage Information Total: 5587.67 GBytea Pree: Reserved: 558 (1) GBytea	5557.41 CByja	
			OK Canoti	Close

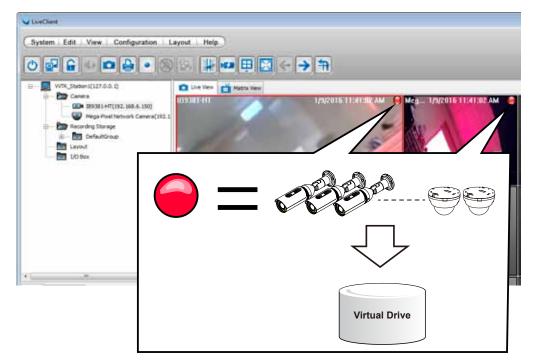
25. The selected **Storage path** will appear on the list along with its total, reserved, and Free storage spaces information. Click Apply.

Recovery Storage Path	ų.		Storage Info		
- UL			Total:	5587.87	GByte
			Reserved:	558.00	GByte
			Free:	5587.61	GByte
vailable Cameras:	Address	Group	Added Cameras 299381+IT	(2/256):	
	192, 168, 6, 190	DefaultGroup	Mega-Pixel Network	Canera	
TH4-C 00 (1990)					
and 4 a 4 11	192.168.6.132	DefaultGroup			
189301+HT Mego-Pixel Network Camera	162, 168, 6, 132	DefailtGroup			
	162, 168, 6, 132	DefailtGroup			
	192, 168, 6, 132	Defailtírea			

26. Open the Camera Management > Insert Camera or Batch Insert Cameras window. Use the Search button to locate cameras in your local area network. Select and click Insert. Select and insert all cameras of your choice in your deployment, and then close the Camera Management window.



27. You will return to the **Live View** window. By default, once cameras have been inserted and the storage path is ready, the NVR starts recording the video streams. Note the red light icons on the view cells. If red icons appear on the view cells, recording is taking place.



28. You are done with the initial configuration. Refer to the rest of the manual for the configurable options in the VAST management software.



- 1. Cameras and the NVR must reside in the same subnet. Otherwise, the NVR will not be able to recruit them into a recording configuration.
- 2. It is recommended all network cameras use static IPs. If you let a DHCP server assign IPs to these cameras, IPs may be changed later and the NVR may not recognize them.

# **RAID Basics**

### **IMPORTANT:**

For a RAID volume configuration, it is recommended you use hard drives of the same model featuring the same capacity and rotation speed. It is also preferred that these drives are running the same version of firmware.

A Redundant Array of Independent Disks is an array, or group, of multiple independent physical drives that provide high performance and fault tolerance. A RAID drive group improves I/O performance and reliability. The RAID drive group appears to the host computer as a single storage volume or as multiple virtual units. An I/O transaction is expedited because several drives can be accessed simultaneously.

A RAID drive group improves data storage reliability and fault tolerance compared to single drive storage. Data loss resulting from a drive failure can be prevented by reconstructing missing data from the remaining drives. The benefits of RAID come from the improvement of I/O performance and the increased reliability.

#### What are the Virtual drives?

Virtual drives are drive groups that are available to the operating systems. The storage space in a virrtual drive comes from all the members in the drive group.

The RAID functions available for virtual drives include:

- Hot spare drives.
- Drive group and virtual drive configurations.
- Initializing one or more virtual drives.
- Individual access to controllers, virtual drives, and disk drives.
- Failed drive rebuild.
- Verification of redundancy data in virtual drives using RAID levels 1, 5, 6, 10, 50, and 60.
- Reconstructing virtual drives after the RAID levels or adding a drive to a drive group.
- Indepently selecting a host controller to work for.

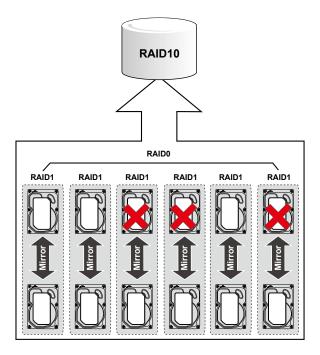
#### **RAID** configuration components

- Drive group: a group of physical drives. These drives will be managed in partitions known as virtual drives.
- Virtual drive: a partition in a drive group made of continguous data segments from the individual disk drives. A virtual drive can consist of the following components:
  - An entire drive group.
  - More than one entire drive group.
  - A part of drive group.
  - Parts of more than one drive group.
  - A combination of any two of the conditions above.

#### **RAID Fault Tolerance**

RAID level	No. of tolerable drive failure
0	No fault tolerance
1	1, each drive group
5	1
6	2
10	multiple, as long as each failure is in a separate drive group
50	1 in each drive group
60	2 in each drive group

For example, if disk failure occurs in different drive groups, a RAID10 configuration can tolerate multiple drive failures. In each RAID1 drive group, data is mirrored to a counterpart disk drive. Data remains intact if one disk drive should fail in each drive group.



#### **Consistency Check**

The consistency check operation verifies the correctness of the data in virtual drives that use RAID levels 1, 5, 6, 10, 50, and 60. RAID0 does not provide data redundancy. In a system with parity, check consistency means calculating the data on one drive and comparing the results to the contents of the parity drive.

#### **Background Initialization**

Background initialization is a check for media errors on the drives when you create a virtual drive. It is an automatic operation that starts five minutes after you create a virtual drive. This check ensures that striped data segments are the same on all of the drives in the drive group.

Background initialization is similar to a consistency check. The difference between the two is that a background initialization is forced on new virtual drives and a consistency check is not.

New RAID 5 virtual drives and new RAID 6 virtual drives require a minimum number of drives for a background initialization to start. If fewer drives exist, the background initialization does not start. The background initialization needs to be started manually. The following number of drives are required:

New RAID 5 virtual drives must have at least five drives for background initialization to start.

New RAID 6 virtual drives must have at least seven drives for background initialization to start.

The default and recommended background initialization rate is 30 percent. Before you change the rebuild rate, you must stop the background initialization or the rate change will not affect the background initialization rate. After you stop background initialization and change the rebuild rate, the rate change takes effect when you restart background initialization.2.1.7Patrol Read

#### **Disk Striping**

Disk striping lets you write data across multiple drives instead of just one drive. Disk striping involves partitioning each drive storage space into stripes that can vary in size from a minimum of 64 KB to 1 MB for MegaRAID controllers and 64 KB for Integrated MegaRAID controllers. The LSISAS2108 controller allows stripe size from 8 KB to 1 MB. These stripes are interleaved in a repeated sequential manner. The combined storage space is composed of stripes from each drive. It is recommended that you keep stripe sizes the same across RAID drive groups.

For example, in a four-disk system using only disk striping (used in RAID level 0), segment 1 is written to disk 1, segment 2 is written to disk 2, and so on. Disk striping enhances performance because multiple drives are accessed simultaneously, but disk striping does not provide data redundancy.



Segment 1 Segment 5 Segment 9 Segment 2 Segment 6 Segment 10 Segment 3 Segment 7 Segment 11

Segment 4 Segment 8 Segment 12

#### Stripe Width

Stripe width is the number of drives involved in a drive group where striping is implemented. For example, a four-disk drive group with disk striping has a stripe width of four.

#### Stripe Size

The stripe size is the length of the interleaved data segments that the RAID controller writes across multiple drives, not including parity drives. For example, consider a stripe that contains 1 MB of drive space and has 64 KB of data residing on each drive in the stripe. In this case, the stripe size is 1 MB and the strip size is 64 KB.

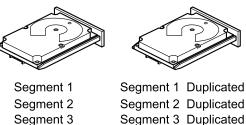
#### Strip Size

The strip size is the portion of a stripe that resides on a single drive.

#### **Disk Mirroring**

With disk mirroring (used in RAID 1 and RAID 10), data written to one drive is simultaneously written to another drive. The primary advantage of disk mirroring is that it provides 100 percent data redundancy. Because the contents of the disk are completely written to a second disk, data is not lost if one disk fails. In addition, both drives contain the same data at all times, so either disk can act as the operational disk. If one disk fails, the contents of the other disk can run the system and reconstruct the failed disk.

Disk mirroring provides 100 percent redundancy, but it is expensive because each drive in the system must be duplicated. The following figure shows an example of disk mirroring.



Segment 3 Segment 4

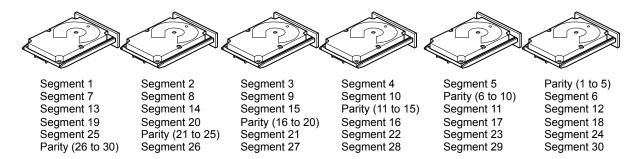
Segment 4 Duplicated 3 01080-00

#### Parity

Parity generates a set of redundancy data from two or more parent data sets. The redundancy data can be used to reconstruct one of the parent data sets in the event of a drive failure. Parity data does not fully duplicate the parent data sets, but parity generation can slow the write process. In a RAID drive group, this method is applied to entire drives or stripes across all of the drives in a drive group. The types of parity are described in the following table.

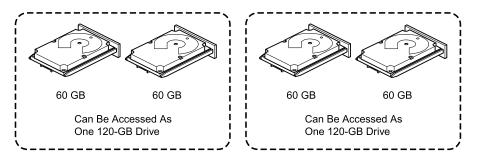
Parity Type	Description
Dedicated	The parity data on two or more drives is stored on an additional disk.
Distributed	The parity data is distributed across more than one drive in the system.

A RAID 5 drive group combines distributed parity with disk striping. If a single drive fails, it can be rebuilt from the parity and the data on the remaining drives. An example of a RAID 5 drive group is shown in the following figure. A RAID 5 drive group uses parity to provide redundancy for one drive failure without duplicating the contents of entire drives. A RAID 6 drive group also uses distributed parity and disk striping, but adds a second set of parity data so that it can survive up to two drive failures.



#### **Disk Spanning**

Disk spanning allows multiple drives to function like one big drive. Spanning overcomes lack of disk space and simplifies storage management by combining existing resources or adding relatively inexpensive resources. For example, four 20-GB drives can be combined to appear to the operating system as a single 80-GB drive. Spanning alone does not provide reliability or performance enhancements. Spanned virtual drives must have the same stripe size and must be contiguous. In the following figure, RAID 1 drive groups are turned into a RAID 10 drive group.



Spanning two contiguous RAID 0 virtual drives does not produce a new RAID level or add fault tolerance. It does increase the capacity of the virtual drive and improves performance by doubling the number of spindles.

Spanning for RAID 00, RAID 10, RAID 50, and RAID 60 Drive Groups

The following table describes how to configure RAID 00, RAID 10, RAID 50, and RAID 60 drive groups by spanning. The virtual drives must have the same stripe size and the maximum number of spans is 8. The full drive capacity is used when you span virtual drives; you cannot specify a smaller drive capacity.

Level	Description
00	Configure a RAID 00 by spanning two or more contiguous RAID 0 virtual drives, up to the
	maximum number of supported devices for the controller.
10	Configure RAID 10 by spanning two or more contiguous RAID 1 virtual drives, up to
	the maximum number of supported devices for the controller. A RAID 10 drive group
	supports a maximum of 8 spans. You must use an even number of drives in each RAID
	virtual drive in the span. The RAID 1 virtual drives must have the same stripe size.
50	Configure a RAID 50 drive group by spanning two or more contiguous RAID 5 virtual
	drives. The RAID 5 virtual drives must have the same stripe size.
60	Configure a RAID 60 drive group by spanning two or more contiguous RAID 6 virtual
	drives. The RAID 6 virtual drives must have the same stripe size.

#### Hot Spares

A hot spare is an extra, unused drive that is part of the disk subsystem. It is usually in Standby mode, ready for service if a drive fails. Hot spares let you replace failed drives without system shutdown or user intervention. The MegaRAID SAS RAID controllers can implement automatic and transparent rebuilds of failed drives using hot spare drives, which provide a high degree of fault tolerance and zero downtime.

The RAID management software lets you specify drives as hot spares. When a hot spare is needed, the RAID controller assigns the hot spare that has a capacity closest to and at least as great as that of the failed drive to take the place of the failed drive. The failed drive is removed from the virtual drive and marked ready awaiting removal after the rebuild to a hot spare begins. You can make hot spares of the drives that are not in a RAID virtual drive.

You can use the RAID management software to designate the hot spare to have enclosure affinity, which means that if drive failures are present on a split backplane configuration, the hot spare will be used first on the backplane side in which it resides. If the hot spare is designated as having enclosure affinity, it tries to rebuild any failed drives on the backplane in which it resides before rebuilding any other drives on other backplanes.

The hot spare can be of two types:

- Global hot spare
- Dedicated hot spare

#### **Global Hot Spare**

Use a global hot spare drive to replace any failed drive in a redundant drive group as long as its capacity is equal to or larger than the coerced capacity of the failed drive. A global hot spare defined on any channel should be available to replace a failed drive on both channels.

#### **Dedicated Hot Spare**

Use a dedicated hot spare to replace a failed drive only in a selected drive group. One or more drives can be designated as a member of a spare drive pool. The most suitable drive from the pool is selected for failover. A dedicated hot spare is used before one from the global hot spare pool.

Hot spare drives can be located on any RAID channel. Standby hot spares (not being used in RAID drive group) are polled every 60 seconds at a minimum, and their status made available in the drive group management software. RAID controllers offer the ability to rebuild with a disk that is in a system but not initially set to be a hot spare.

Observe the following parameters when using hot spares:

- Hot spares are used only in drive groups with redundancy: RAID levels 1, 5, 6, 10, 50, and 60.
- A hot spare connected to a specific RAID controller can be used to rebuild a drive that is connected only to the same controller.
- You must assign the hot spare to one or more drives through the controller BIOS or use drive group management software to place it in the hot spare pool.
- A hot spare must have free space equal to or greater than the drive it replaces. For example, to replace a 500-GB drive, the hot spare must be 500-GB or larger.

#### **Disk Rebuilds**

When a drive in a RAID drive group fails, you can rebuild the drive by re-creating the data that was stored on the drive before it failed. The RAID controller re-creates the data using the data stored on the other drives in the drive group. Rebuilding can be performed only in drive groups with data redundancy, which includes RAID 1, 5, 6, 10, 50, and 60 drive groups.

The RAID controller uses hot spares to rebuild failed drives automatically and transparently, at user-defined rebuild rates. If a hot spare is available, the Rebuild operation can start automatically when a drive fails. If a hot spare is not available, the failed drive must be replaced with a new drive so that the data on the failed drive can be rebuilt.

The failed drive is removed from the virtual drive and marked ready awaiting removal when the Rebuild operation to a hot spare begins. If the system goes down during a Rebuild operation, the RAID controller automatically resumes the rebuild after the system reboots.

# 

When the Rebuild operation to a hot spare begins, the failed drive is often removed from the virtual drive before management applications detect the failed drive. When this removal occurs, the event logs show the drive rebuilding to the hot spare without showing the failed drive. The formerly failed drive will be marked as ready after a Rebuild operation begins to a hot spare. If a source drive fails during a rebuild to a hot spare, the Rebuild operation fails, and the failed source drive is marked as offline. In addition, the rebuilding hot spare drive is changed back to a hot spare. After a Rebuild operation fails because of a source drive failure, the dedicated hot spare is still dedicated and assigned to the correct drive group, and the global hot spare is still global.

An automatic drive Rebuild operation will not start if you replace a drive during a RAID-level migration. The Rebuild operation must be started manually after the expansion or migration procedure is complete. (RAID-level migration changes a virtual drive from one RAID level to another.)

#### Hot Swap

A hot swap is the manual replacement of a defective drive unit while the computer is still running. When a new drive has been installed, a Rebuild operation occurs automatically if these situation occurs:

- The newly inserted drive is the same capacity as or larger than the failed drive.
- The newly inserted drive is placed in the same drive bay as the failed drive it is replacing.

The RAID controller can be configured to detect the new drives and rebuild the contents of the drive automatically.

#### **Drive States**

A drive state is a property indicating the status of the drive. The drive states are described in the following table.

Parity Type	Description
Online	A drive that can be accessed by the RAID controller and is part of the virtual drive.
Unconfigured Good	A drive that is functioning normally but is not configured as a part of a virtual drive or as a
	hot spare.
Hot Spare	A drive that is powered up and ready for use as a spare in case an online drive fails.
Failed	A drive that was originally configured as Online or Hot Spare, but on which the firmware
	detects an unrecoverable error.
Rebuild	A drive to which data is being written to restore full redundancy for a virtual drive.
Unconfigured Bad	A drive on which the firmware detects an unrecoverable error; the drive was Unconfigured
	Good or the drive could not be initialized.
Missing	A drive that was Online but which has been removed from its location.
Offline	A drive that is part of a virtual drive but which has invalid data as far as the RAID
	configuration is concerned.
Shield State	An interim state of physical drive for diagnostic operations.
Copyback	A drive that has replaced the failed drive in the RAID configuration.

#### Virtual Drive States

Parity Type	Description
Online	The virtual drive operating condition is good. All configured drives are online.
Degraded	The virtual drive operating condition is not optimal. One of the configured drives has
	failed or is offline.
Partial Degraded	The operating condition in a RAID 6 virtual drive is not optimal. One of the configured
	drives has failed or is offline. A RAID 6 drive group can tolerate up to two drive failures.
Failed	The virtual drive has failed.
Offline	The virtual drive is not available to the RAID controller.

The virtual drive states are described in the following table.

#### **Beep Codes**

An alarm sounds on the MegaRAID controller when a virtual drive changes from an optimal state to another state, when a hot spare rebuilds, and for test purposes.

Parity Type	Virtual Drive State	Beep Code
RAID 0 virtual drive loses a virtual drive	Offline	3 seconds on and 1 second off
RAID 1 virtual drive loses a mirror drive	Degraded	1 second on and 1 second off
RAID 1 virtual drive loses both drives	Offline	3 seconds on and 1 second off
RAID 5 virtual drive loses one drive	Degraded	1 second on and 1 second off
RAID 5 virtual drive loses two or more	Offline	3 seconds on and 1 second off
drives		
RAID 6 virtual drive loses one drive	Partially degraded	1 second on and 1 second off
RAID 6 virtual drive loses two drives	Degraded	1 second on and 1 second off
RAID 6 virtual drive loses more than two	Offline	3 seconds on and 1 second off
drives		
A hot spare completes the Rebuild	B/A	1 second on and 3 seconds off
process and is brought into a drive group		
A copy back occurs after a Rebuild	Optimal	1 second on and 3 seconds off
operation completes		

#### RAID Levels

The RAID controller supports RAID levels 0, 00, 1, 5, 6, 10, 50, and 60. The supported RAID levels are summarized in the following section.

In addition, the RAID controller supports independent drives (configured as RAID 0 and RAID 00 drive groups) The following sections describe the RAID levels in detail.

Summary of RAID Levels

A RAID 0 drive group uses striping to provide high data throughput, especially for large files in an environment that does not require fault tolerance.

A RAID 1 drive group uses mirroring so that data written to one drive is simultaneously written to another drive. The RAID 1 drive group is good for small databases or other applications that require small capacity but complete data redundancy.

A RAID 5 drive group uses disk striping and parity data across all drives (distributed parity) to provide high data throughput, especially for small random access.A RAID 6 drive group uses distributed parity, with two independent parity blocks per stripe, and disk striping.

A RAID 6 virtual drive can survive the loss of any two drives without losing data. A RAID 6 drive group, which requires a minimum of three drives, is similar to a RAID 5 drive group. Blocks of data and parity information are written across all drives. The parity information is used to recover the data if one or two drives fail in the drive group.

A RAID 00 drive group is a spanned drive group that creates a striped set from a series of RAID 0 drive groups. A RAID 10 drive group, a combination of RAID 0 and RAID 1 drive groups, consists of striped data across mirrored spans.

A RAID 10 drive group is a spanned drive group that creates a striped set from a series of mirrored drives. A RAID 10 drive group allows a maximum of 8 spans. You must use an even number of drives in each RAID virtual drive in the span. The RAID 1 virtual drives must have the same stripe size. A RAID 10 drive group provides high data throughput and complete data redundancy but uses a larger number of spans.

A RAID 50 drive group, a combination of RAID 0 and RAID 5 drive groups, uses distributed parity and disk striping. A RAID 50 drive group is a spanned drive group in which data is striped across multiple RAID 5 drive groups. A RAID 50 drive group works best with data that requires high reliability, high request rates, high data transfers, and medium-to-large capacity.

# 

Having virtual drives of different RAID levels, such as RAID Level0 and RAID Level5, in the same drive group is not allowed. For example, if an existing RAID5 virtual drive is created out of partial space in an array, the next virtual drive in the array has to be RAID Level 5 only.

A RAID 60 drive group, a combination of RAID level 0 and RAID Level 6, uses distributed parity, with two independent parity blocks per stripe in each RAID set, and disk striping. A RAID 60 virtual drive can survive the loss of two drives in each of the RAID 6 sets without losing data. A RAID 60 drive group works best with data that requires high reliability, high request rates, high data transfers, and medium-to-large capacity.

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The MegaSR controller supports the standard RAID levels – RAID0, RAID1, RAID5, and RAID10. The MegaSR controller comes in two variants, SCU and AHCI, both supporting a maximum of eight physical drives. A maximum of eight virtual drives can be created (using RAID0, RAID 1, RAID5, and RAID10 only) and controlled by the MegaSR controller. One virtual drive can be created on an array (a maximum of eight if no other virtual drives are already created on the MegaSR controller), or you can create eight arrays with one virtual drive each. However, on a RAID10 drive group, you can create only one virtual drive on a particular array.

#### RAID 0 Drive Groups

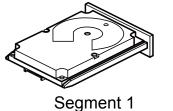
A RAID 0 drive group provides disk striping across all drives in the RAID drive group. A RAID0 drive group does not provide any data redundancy, but the RAID 0 drive group offers the best performance of any RAID level. The RAID 0 drive group breaks up data into smaller segments, and then stripes the data segments across each drive in the drive group. The size of each data segment is determined by the stripe size. A RAID 0 drive group offers high bandwidth.

By breaking up a large file into smaller segments, the RAID controller can use both SAS drives and SATA drives to read or write the file faster. A RAID 0 drive group involves no parity calculations to complicate the write operation. This situation makes the RAID 0 drive group ideal for applications that require high bandwidth but do not require fault tolerance. The following table provides an overview of the RAID 0 drive group. The following figure provides a graphic example of a RAID 0 drive group.

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RAID level 0 is not fault tolerant. If a drive in a RAID 0 drive group fails, the entire virtual drive (all drives associated with the virtual drive) fails.

Uses	Provides high data throughput, especially for large files. Any environment that does not	
	require fault tolerance.	
Strong points	Provides increased data throughput for large files.	
	No capacity loss penalty for parity.	
Weak points	Does not provide fault tolerance or high bandwidth.All data is lost if any drive fails.	
Drives	1 to 32	



Segment 3 Segment 5 Segment 7

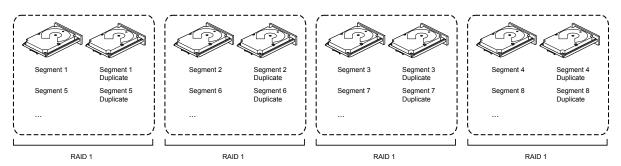


Segment 2 Segment 4 Segment 6 Segment 8

#### RAID 1 Drive Groups

In RAID 1 drive groups, the RAID controller duplicates all data from one drive to a second drive in the drive group. A RAID 1 drive group supports an even number of drives from 2 through 32 in a single span. The RAID1 drive group provides complete data redundancy, but at the cost of doubling the required data storage capacity. The following table provides an overview of a RAID1 drive group. The following figure provides a graphic example of a RAID1 drive group.

Uses	Use RAID 1 drive groups for small databases or any other environment that requires fault
	tolerance but small capacity.
Strong points	Provides complete data redundancy. A RAID 1 drive group is ideal for any application that requires fault tolerance and minimal capacity.
Weak points	Requires twice as many drives. Performance is impaired during drive rebuilds.
Drives	2 through 32 (must be an even number of drives)



#### RAID 5 Drive Groups

A RAID 5 drive group includes disk striping at the block level and parity. Parity is the data's property of being odd or even, and parity checking is used to detect errors in the data. In RAID5 drive groups, the parity information is written to all drives. A RAID5 drive group is best suited for networks that perform a lot of small input/output (I/O) transactions simultaneously. The following table provides an overview of a RAID5 drive group. The following figure provides a graphic example of a RAID5 drive group.

Uses	Provides high data throughput, especially for large files.
	Use RAID 5 drive groups for transaction processing applications because each drive can read and write independently.
	If a drive fails, the RAID controller uses the parity drive to re-create all missing information.Use also for online customer service that requires fault tolerance.Use for any
	application that has high read request rates but random write request rates.
Strong points	Provides data redundancy, high read rates, and good performance in most environments. Provides redundancy with lowest loss of capacity.
Weak points	Not well suited to tasks requiring lots of small writes or small block write operations. Suffers more impact if no cache is used.
	Drive performance is reduced if a drive is being rebuilt.
	Environments with few processes do not perform as well because the RAID drive group overhead is not offset by the performance gains in handling simultaneous processes.
Drives	3 through 32

Segment 11

Segment 17

Segment 23

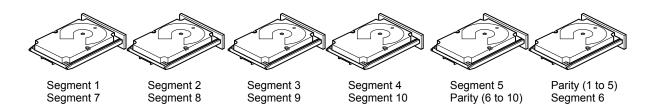
Segment 29

Segment 12

Segment 18

Segment 24

Seament 30



Parity (11 to 15)

Segment 16

Segment 22

Segment 28

Segment 15

Segment 21

Segment 27

Parity (16 to 20)

RAID 6 Drive Groups

Segment 13

Segment 19

Segment 25

Parity (26 to 30)

Segment 14

Segment 20

Seament 26

Parity (21 to 25)

A RAID6 drive group is similar to a RAID5 drive group (disk striping and parity), except that instead of one parity block per stripe, there are two. With two independent parity blocks, A RAID6 drive group can survive the loss of any two drives in a virtual drive without losing data. A RAID6 drive group provides a high level of data protection through the use of a second parity block in each stripe. Use a RAID6 drive group for data that requires a very high level of protection from loss.

In the case of a failure of one drive or two drives in a virtual drive, the RAID controller uses the parity blocks to re-create all of the missing information. If two drives in a RAID6 virtual drive fail, two drive rebuilds are required, one for each drive. These rebuilds do not occur at the same time. The controller rebuilds one failed drive, and then the other failed drive. The following table provides an overview of a RAID6 drive group.

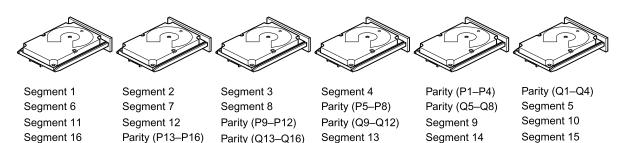
Uses	Use for any application that has high read request rates but low random or small block
	write rates.
Strong points	Provides data redundancy, high read rates, and good performance in most environments. Can survive the loss of two drives or the loss of a drive while another drive is being rebuilt.Provides the highest level of protection against drive failures of all of the RAID levels.Performance is similar to that of a RAID5 drive group.
Weak points	Not well-suited to tasks requiring a lot of small and/or random write operations.A RAID 6 virtual drive must generate two sets of parity data for each write operation, which results in a significant decrease in performance during write operations.
	Drive performance is reduced during a drive Rebuild operation.Environments with few processes do not perform as well because the RAID overhead is not offset by the performance gains in handling simultaneous processes.
	A RAID6 drive group costs more because of the extra capacity required by using two parity blocks per stripe.
Drives	3 through 32

The following figure shows a RAID6 drive group data layout. The second set of parity drives is denoted by Q. The P drives follow the RAID5 drive group parity scheme.

Segment 18

Segment 19

Segment 20



Segment 17

Note: Parity is distributed across all drives in the drive group.

Parity (Q17-Q20)

Parity (P17-P20)

#### **RAID 00 Drive Groups**

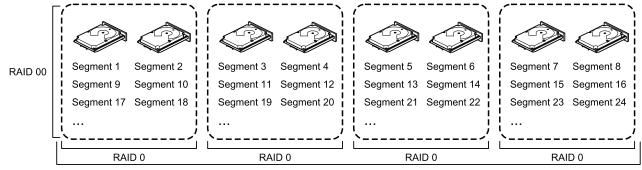
A RAID 00 drive group is a spanned drive group that creates a striped set from a series of RAID0 drive groups. A RAID00 drive group does not provide any data redundancy, but, along with the RAID0 drive group, does offer the best performance of any RAID level. A RAID00 drive group breaks up data into smaller segments and then stripes the data segments across each drive in the drive groups. The size of each data segment is determined by the stripe size. A RAID00 drive group offers high bandwidth.



RAID level 00 is not fault tolerant. If a drive in a RAID 0 drive group fails, the entire virtual drive (all drives associated with the virtual drive) fails.

By breaking up a large file into smaller segments, the controller can use both SAS drives and SATA drives to read or write the file faster. A RAID00 drive group involves no parity calculations to complicate the write operation. This situation makes the RAID00 drive group ideal for applications that require high bandwidth but do not require fault tolerance. The following table provides an overview of the RAID00 drive group. The following figure provides a graphic example of a RAID 00 drive group.

Uses	Provides high data throughput, especially for large files. Any environment that does not
	require fault tolerance.
Strong points	Provides increased data throughput for large files.
	No capacity loss penalty for parity.
Weak points	Does not provide fault tolerance or high bandwidth.
	All data lost if any drive fails.
Drives	2 through 256



RAID 0

#### RAID 10

A RAID10 drive group is a combination of RAID level 0 and RAID level 1, and it consists of stripes across mirrored drives. A RAID10 drive group breaks up data into smaller blocks and then mirrors the blocks of data to each RAID1 drive group. The first RAID1 drive in each drive group then duplicates its data to the second drive. The size of each block is determined by the stripe size parameter, which is set during the creation of the RAID set. The RAID 1 virtual drives must have the same stripe size.

Spanning is used because one virtual drive is defined across more than one drive group. Virtual drives defined across multiple RAIDlevel 1 drive groups are referred to as RAID level 10, (1+0). Data is striped across drive groups to increase performance by enabling access to multiple drive groups simultaneously.

Each spanned RAID 10 virtual drive can tolerate multiple drive failures, as long as each failure is in a separate drive group. If drive failures occur, less than total drive capacity is available. Configure RAID 10 drive groups by spanning two contiguous RAID1 virtual drives, up to the maximum number of supported devices for the controller. A RAID10 drive group supports a maximum of 8spans, with a maximum of 32drives per span. You must use an even number of drives in each RAID10 virtual drive in the span.

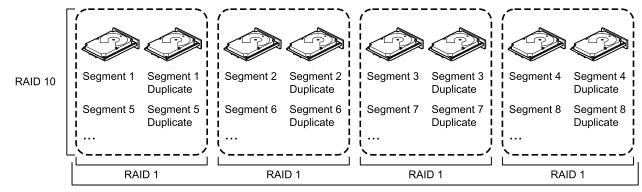
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Other factors, such as the type of controller, can restrict the number of drives supported by RAID 10 virtual drives.

Uses	Appropriate when used with data storage that needs 100 percent redundancy of mirrored drive groups and that also needs the enhanced I/O performance of RAID 0 (striped drive groups.)
	A RAID10 drive group works well for medium-sized databases or any environment that
	requires a higher degree of fault tolerance and moderate-to-medium capacity.
Strong points	Provides both high data transfer rates and complete data redundancy.
Weak points	Requires twice as many drives as all other RAID levels except in RAID 1 drive groups.
Drives	4 to 32 in multiples of 4 — The maximum number of drives supported by the controller
	(using an even number of drives in each RAID 10 virtual drive in the span).

The following table provides an overview of a RAID10 drive group.

In the following figure, virtual drive 0 is created by distributing data across four drive groups (drive groups 0 through3).



RAID 0

#### RAID 50

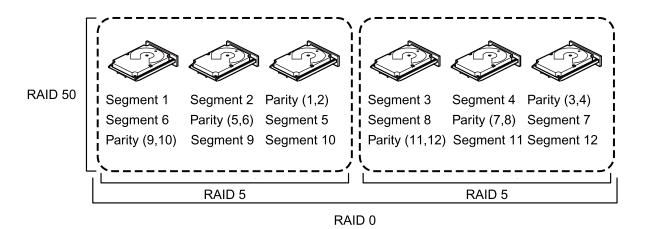
A RAID50 drive group provides the features of both RAID0 and RAID5 drive groups. A RAID50 drive group includes both distributed parity and drive striping across multiple drive groups. A RAID50 drive group is best implemented on two RAID5 drive groups with data striped across both drive groups.

A RAID50 drive group breaks up data into smaller blocks and then stripes the blocks of data to each RAID5 disk set. A RAID5 drive group breaks up data into smaller blocks, calculates parity by performing an exclusive OR operation on the blocks, and then performs write operations to the blocks of data and parity to each drive in the drive group. The size of each block is determined by the stripe size parameter, which is set during the creation of the RAID set.

A RAID level 50 drive group can support up to eight spans and tolerate up to eight drive failures, though less than total drive capacity is available. Though multiple drive failures can be tolerated, only one drive failure can be tolerated in each RAID 5 level drive group.

The following table provides an overview of a RAID50 drive group.

Uses	Appropriate when used with data that requires high reliability, high request rates, high
	data transfer, and medium-to-large capacity.
	Also used when a virtual drive of greater than 32 drives is needed.
Strong points	Provides high data throughput, data redundancy, and very good performance.
Weak points	Requires two times to eight times as many parity drives as a RAID 5 drive group.
Drives	Eight spans of RAID 5 drive groups that contain 3 to 32 drives each (limited by the
	maximum number of devices supported by the controller)



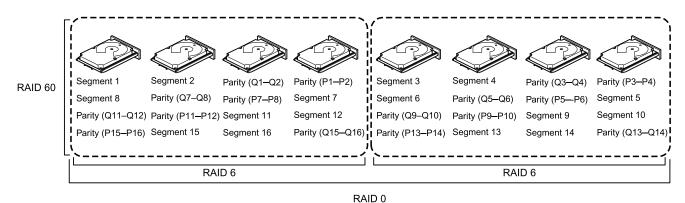
#### RAID 60

A RAID 60 drive group provides the features of both RAID 0 and RAID 6 drive groups, and includes both parity and disk striping across multiple drive groups. A RAID6 drive group supports two independent parity blocks per stripe. A RAID 60 virtual drive can survive the loss of two drives in each of the RAID6 drive group sets without losing data. A RAID60 drive group is best implemented on two RAID6 drive groups with data striped across both drive groups.

A RAID60 drive group breaks up data into smaller blocks and then stripes the blocks of data to each RAID6 disk set. A RAID6 drive group breaks up data into smaller blocks, calculates parity by performing an exclusive-OR operation on the blocks, and then performs write operations to the blocks of data and writes the parity to each drive in the drive group. The size of each block is determined by the stripe size parameter, which is set during the creation of the RAID set.

A RAID60 drive group can support up to 8spans and tolerate up to 16 drive failures, though less than total drive capacity is available. Two drive failures can be tolerated in each RAID 6 level drive group.

Uses	<ul> <li>Provides a high level of data protection through the use of a second parity block in each stripe. Use a RAID60 drive group for data that requires a very high level of protection from loss.</li> <li>In the case of a failure of one drive or two drives in a RAID set in a virtual drive, the RAID controller uses the parity blocks to re-create all of the missing information. If two drives in a RAID 6 set in a RAID60 virtual drive fail, two drive Rebuild operations are required, one for each drive. These Rebuild operations can occur at the same time.</li> </ul>
	Use for online customer service that requires fault tolerance. Use for any application that has high read request rates but low write request rates. Also used when a virtual drive of greater than 32 drives is needed.
Strong points	Provides data redundancy, high read rates, and good performance in most environments. Each RAID6 set can survive the loss of two drives or the loss of a drive while another drive is being rebuilt.Provides the highest level of protection against drive failures of all of the RAID levels.
Weak points	Not well-suited for small block write or random write operations. A RAID 60 virtual drive must generate two sets of parity data for each write operation, which results in a significant decrease in performance during write operations.Drive performance is reduced during a drive Rebuild operation. Environments with few processes do not perform as well because the RAID overhead is not offset by the performance gains in handling simultaneous processes. A RAID6 drive group costs more because of the extra capacity required by using two
	parity blocks per stripe.
Drives	A minimum of 6.



Note: Parity is distributed across all drives in the drive group.

# **Technical Specifications**

lodel	NR9681	Network Interface	10/100/1000Mbps Ethernet (RJ-45) x2		
ystem	NK9081		IPv4,TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, SMTP, FTP,		
IS	Embedded Windows	Protocols	DHCP, NTP, DNS, DDNS, IP Filter		
PU	Intel Core i5	Power			
lash AM	64G SATA DOM 8GB	Power Input Power Consumption	Redundant Power 100~220V AC Max. 740 W		
AM /atchdog	AGB Hardware + Software	LED Indicator	Wax. 740 W		
ower Restoration	System Restart Automatically after Power Recovery	LED Indicator	Power, HDD, Net1, Net2, Overheat, Power fail		
torage		Mechanic			
DD Devices	Hot-Swappable Tray x8	Form Factor	2U Rackmount		
IDD Max. Capacity	6TB x8	Operation Buttons Dimensions	Power, Reset 89 (H) x 437 (W) x 648 (D) mm		
isk Management	Create, Format and Remove Disk RAID 0, 1, 5, 6, 10	Weight	27 kg (without HDD)		
ideo & Audio		Operating Temperature	5°C ~ 35°C (41°F ~ 95°F)		
ideo Output	HDMI x1, Display Port x1, VGA x1, DVI x1	Humidity	0 ~ 95%		
esolution	HDMI: 4096x2304 DP: 3200x2000	General			
esolution	VGA/DVI: 1920x1200	Safety Certifications Warranty	CE, LVD, FCC, VCCI, C-Tick, UL 36 months		
raphics Decoder	Hardware decoding	Client PC Requirements	50 11011113		
	H.265/H.264: 2560x1920 @ 30 fps (2-CH)	Operating System	Microsoft Windows 8, 7, Vista, XP		
	1920x1920@ 501ps (2-CH) 1920x1080@ 120 fps (8-CH)		Microsoft Windows Server 2012, 2008, 2003, 2000		
ecoding Capacity	1280x720 @ 240 fps (16-CH)	CPU	Intel Celeron or above		
	1280x720 @ 480 fps (32-CH) 1280x720 @ 480 fps (64-CH)	Memory Ethenet	2 GB or above 10/100Mbps		
amera Position	Change the viewcell position on the Live View screens	Display Resolution	1024x768 pixels or above		
xternal Interface	change are remeen position on the live view screens	Web Browser	Internet Explorer 11/10/9 (32 bit)		
SB Interface	USB 2.0 x4	Software AP	Installation Wizard 2, Shepherd, VAST		
55 meriace	USB 3.0 x2	Mobile/Tablet App	iViewer (iOS/Android)		
udio	Microphone audio jack Input x1 3.5 Line input audio jack x1	Accessories	Power Cord, Quick Installation Guide, 8x H.D.D. Tray, 1x USB		
	3.5 Line output audio jack x1	Others	Mouse		
letwork					
oftware Information					
ecord			Motion DI/O Video Loct/Pasters DIR Tamania T		
	64	Camera Event	Motion, DI/O, Video Lost/Restore, PIR, Tampering, Temperal IR, Line Crossing Detection, Loitering Detection, Field Detec		
laximum Channel ecord Throughput (MB)	64 512 Mbps	Camera Status	Connection Status, Recording Status, Recording Error		
letwork Throughput (MB)	400 Mbps	Substation	Substation Connection Status		
udio Format	G.711, G.726, AMR, AAC	Storage Status	Storage Connection Status, Storage Capacity Status		
ideo Format	MJPEG, MPEG4, H.264 AVC, H.264 SVC, H.265	Station Status	License Status, Network Status, Virtual Memory Status		
ideo Resolution	VGA, 1MP, 2MP, 3MP, 5MP & 9MP Camera	Action	Email, Start Recording, Set DO, GSM Short Message, HTTP &		
	Pre-Record: 3 ~ 15		Client Notification		
ecording Time (sec.)	Post-Record: 10 ~ 60	Recording Time (sec.)	Max. 30		
ecording Stream	Single	Backup			
ecording Mode	Continuous, Schedule, Manual, Event, Activity Adaptive	Manual	USB Dongle (FAT Format) NAS (SMB & CIFS)		
	Streaming	System	To to (one of end)		
ecording Setting ecording Path	Recycle (unit: Size or Day) Local Path or Network Path	System	Authentication: Basic Account / Windows AD Account		
ecord Video Format	3GP		User Account: 1024		
iveView (Local Display)	SGP	User Management	User Account Time Limit: No limitation		
tream Application	Stream Selection & Auto Stream Size		User Level: Administrator / Power User / User / Operation / Guest		
a can reprication	64-Channel (with Dual Monitors)	Log	Operation, System and Event Log		
iveView Display	Multi Layout Display: 1x1, 2x2, 1+5, 3x3, 1+12, 4x4, 5x5, 1+31,	Date&Time	Sync Server		
	1P+2, 1P+6, 1P+8, 2V, 3V, 4V, 2V+3 Single Layout Display, Full Screen Display, Sequential Display	Firmware	Manual update		
	Drag & Drop, Remote I/O Control, PiP (Digital Zoom), Instant	Restore Default	Supported		
	Replay, De-interlace, Video Display Mode (Aspect Ratio, Hide	Backup/Restore (Configuration)	Supported		
Ionitor Enhancement	Borders, Keep Top/Down Borders), Fisheye Dewarp (Regular: 10, 1P, 1R, 103R, 4R; Wall Mount: 1P2R, 1P3R; Ceiling/Floor Mount:	Language	Czech, English, French, German, Italian, Japanese, Persian, Portuguese, Russian, Spanish, Simplified Chinese, Traditiona		
ionitor emancement	2P, 4R Pro, 108R), Video Enhancement (Basic Mode: Brightness,	Language	Chinese		
	Contrast, Saturation, Hue; Intelligent Mode: Defog, Rain, Snow,	Camera Intergration			
T7 Central	Fire / Smoke) Panel Control & Mouse Click Control	Insert Camera	Manual, Search		
TZ Control	Direction Control, Home, Zoom, Focus, Iris, Preset, Patrol	Video (Media) Setting	Compression, Resolution, FPS, Video Quality		
TZ Operation	(Group), Pan, Stop, Speed	Audio Setting	Codec, Bitrate		
layback (Local Display)		PTZ Control	Panel Control & Mouse Click Control		
	16 Channels	PTZ Operation	Direction Control, Home, Zoom, Focus, Iris, Preset, Patrol		
layback Display	Multi Layout Display: Multi Layout Display: 1x1, 2x2, 1+5, 3x3,		(Group), Pan, Stop, Speed		
	1+12, 4x4, 2V, 3V, 4V, 2V+3 Single Layout Display, Full Screen Display, Sequential Display	Motion Detection ONVIF Core Spec	Supported Version 2.2 or above (By Project)		
lavback Control	Play, Rewind, Pause, Stop, Next/Previous Video Start, Next/	ONVIF Core spec	Video (H.264, MPEG4 & MJPEG) & Audio (G.711, One Way)		
ayback CUILIUI	Previous Frame, 1/8X ~ 64X Speed Control, Bookmark	ONVIF Recording	Continuous, Schedule, Manual		
ideo Search	Browsing, Date & Time (Fast), Event, Bookmark, Alarm, Log,	ONVIF Control	PTZ Control (Up, Down, Left, Right & Zoom In/Out)		
	Timeline, Timeline Scale		Discover the other brand camera through		
	Drag & Drop, PiP (Digital Zoom), De-interlace, Video Display Mode (Aspect Ratio, Hide Borders, Keep Top/Down Borders),	ONVIF Discover	"Insert Camera & Batch Insert"		
Ionitor Enhancement	Fisheye Dewarp (Regular: 10, 1P, 1R, 103R, 4R; Wall Mount:	Device Intergration			
	1P2R, 1P3R; Ceiling/Floor Mount: 2P, 4R Pro, 108R), Video Enhancement (Basic Mode: Brightness, Contrast, Saturation,	UPS	Windows UPS Compatible		
	Hue; Intelligent Mode: Defog, Rain, Snow, Fire/Smoke)	Joystick	VIVOTEK USB Joystick All Windows® Compatible USB Joystick		
napshot	JPEG & BMP	I/O Box	Advantech ADAM-6000		
ideo Clip Export	AVI, 3GP & EXE	Switch	VIVOTEK VivoCam PoE Switch (AW-GEV Series)		
iveView (Remote)					
iveView Display	32 Channels Multi Layout display: 1x1, 2x2, 3x3, 4x4, 5x5, 1+5, 1+12, 1+31				
	Drag & Drop, Image Freeze, Audio Control, Remote I/O Control,	Dimensions			
Ionitor Enhancement	Event Notification, Bookmark, Fisheye Dewarp (10, 1P, 1R)				
TZ Control	Panel Control				
TZ Operation	Direction Control, Home, Zoom, Preset				
napshot	JPEG	89 mm	648 mm		
layback (Remote)					
layback Display	1 Channel				
	Multi Layout display: 1x1				
layback Control	Regular (Play, Pause, Stop), Speed Control, Timeline, Timeline Scale		437		
	Drag & Drop, Audio Control, PiP Control, Fisheye Dewarp (10,				
Ionitor Enhancement	1P, 1R)				
	JPEG				
napshot	ji 20				
napshot Ilarm Management	j, 20		<u></u>		

#### VIVOTEK INC.

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# **VAST Server and Client Components**

There are four components in VAST: one server component--VAST Server, three client components--**VAST LiveClient, VAST Playback**, and **VAST Matrix**.

**VAST Server** provides a centralized management site for video recording. **VAST LiveClient** is a client program for the user to login and modify the server's configuration, edit the server's recording storage, schedules and many other functions on the server; **VAST Playback** is another client program for the user to log in and browse the recorded video database and video clips related to specific events on the server.

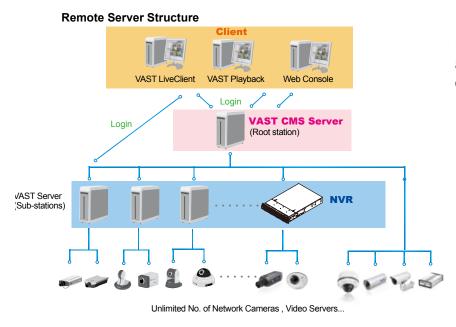
# **Usage Scenario**

The powerful management scalability of VAST makes it suitable for managing small- to large-scale structures.

All the functions can be simultaneously performed on one single site.



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.



Please refer to page 231 for Logical Tree configuration, which allows for a flexible and useoriented privilege control.

# **VAST Server Functionality**

- Centralized management site for all the logged in clients
- Maintain the configuration of the hierarchical management list
- Hundreds of video recording channels
- Store recorded data onto multiple networked or local hard disks
- Live video for the local/remote LiveClient users
- Retrieval of recorded video for the local/remote Playback users
- Zero latency database recovery

LiveClient is the management interface to your VAST server. The server-related settings are made via the VAST LiveClient utility. The convenient and intuitive user interface on VAST LiveClient provides access to camera, live monitoring, and recording configurations.

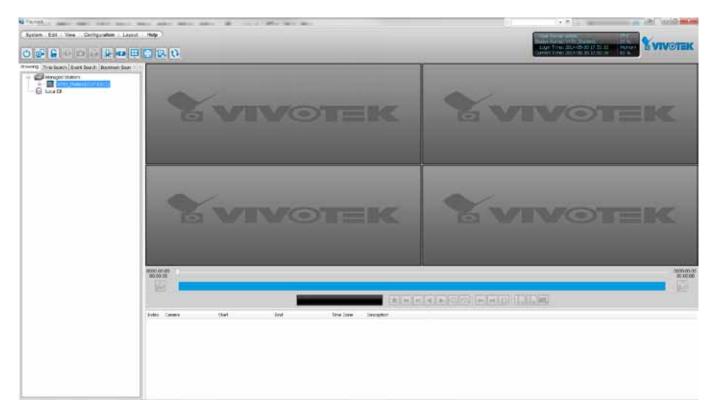
# **VAST LiveClient Functionality**

- Server function control
  - Hierarchical station management
  - User account management
  - Recording storage management
  - Recording schedule management
  - Recorded data backup
  - Event trigger management
- Flexible video live view layout
  - Dual screens for a maximum of 64 or more channels for simultaneous monitoring
  - 1x1, 2V, 1P+2, 3V, 2x2, 4V, 2V+3, 1+5, 1P+6, 3x3, 1P+8, 1+12, 4x4, 5x5, 1+31 monitoring layouts (V stands for vertical layout)
  - 1P+2, 1P+6, and 1P+8 Panoramic PTZ layouts
  - Multiple video viewing pages
- Virtual Matrix for video wall display
- Intelligent PiP function
- E-map for overall management
- Network storage for recorded video
- Convenient switching among multiple monitors
- PTZ / E-PTZ operation panel for camera control
- Supports two way audio
- Instant playback for event recording
- Instant replay for immediate playback
- Supports joystick control
- Remote configuration for network cameras

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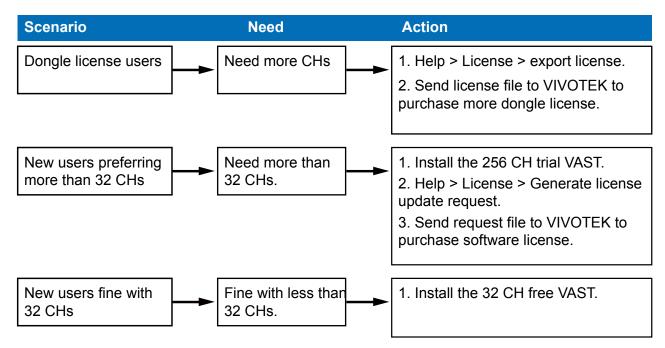
# **VAST Playback Functionality**

- Browse the database of recorded video from the server
- Flexible video playback layout
  - Maximum 16 channels with simultaneous playback
  - 1x1, 2V, 3V, 2x2, 4V, 2V+3, 1+5, 3x3, 1+12, 4x4 video playback layouts
- Supports powerful playback functions
  - 1/8x, 1/4x, 1/2x slow-down playback
  - 2x, 4x, 8x, 16x, 32x, 64x video playback speed
- Intelligent PiP function
- Supports convenient evidence and data exporting
  - Export media files of recorded video
  - Supports snapshot and print out
- Supports convenient switch among multiple monitors
- Search engine:
  - Time search
  - Event search
  - Bookmark search
  - Alarm and Log search
- Playback while recording
- Support synchronous/ asynchronous playback



# VAST Software License

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



The VAST software provides 32 free channels. Since revision 1.11, the VAST software is activated using a software license instead of the original hardware dongle.

For users running the previous dongle version, there is no need to upgrade their original license. If they need the license for more channels, They can export their license file, and purchase more dongle licenses.

For users who require more than 32 channels, they can install the 256 channel trial version first, and go to **Help** > **License** page, and click on **Generate License Update Request.** Send the request back to VIVOTEK to purchase more channel licenses.

System	Purchased 320	VIVOTEK Used D (Free: 17/32)	Other brand Used	Unused 319
ala contra	560	0 ((100. 17/32)		319
c		-		
				Hide <<
	Purchased	VIVOTEK Used	Other brand Used	Unused
VVTK_Station1	20	0 (Free: 4/32)	0	20
AVTK	300	0 (Pree: 13/32)	1	299
·				

When you purchased and received the official software license, use the **Import License** function to activate the official license.

When importing purchased licenses, you can manally select which station/license file to update, or click the **Auto Dispatch** button and let system decide the distribution of license updates especially when there are substations under a managing VAST server.

Before the Auto Dispatch function is available, license has to be individually updated on every substations.

# **Reminders for VAST Software License**

#### Limitations:

1. The Batch import/export function applies when a managing VAST server needs to collect and update the licensing information from subordinate VAST substations and itself. An enterprise may have a central management server and several VAST instances running in branch offices. In that case, the substations will be listed on the device list, and may not be displayed on a hierarchical structure.

The Batch import/export function is accessed through the **Help** > **License** menu on LiveClient.

	Nine	1P address	Version	Type	Path		
	VVTI Station L	192.108.6.205	1.11.11.1	- SWERNIN			
0	VVTK	192.168.40.66	1.10.0.8	KeyDongle			
	111	192.168.40.1	1.10.0.9	Trial			
E 🗧	000	192.168.40.37					
1.00							

- 2. The batch download/import function only takes effect on a VAST instance running on server, not on the Linux-based NVR.
- 3. The trial channels on VAST substations will not be available for use on a managing VAST server (one that manages multiple substations).
- 4. If you access a VAST deployment via a web console, the license related information will not be available.
- 5. In this revision, an identical software license applies to both VIVOTEK and other-brand cameras (ONVIF). You do not need to activate two different kinds of software licenses.
- 6. The Batch export update of the current license profile is supported.
- 7. The licensing mechanism does not apply to machines running Virtualized OSes (VMWare, VirtualBox, Hyper-V, Parallels), either through an upgrade or generating software license on a new installation.
- 8. If VAST is removed and then re-installed, the number of licensed channels remains intact.
- 9. If users plan to integrate the software licenses from previous dongle licenses, problems may occur if users changed the exported license file name.

- 10. The VAST rev. 1.11 supports 32 free channels, and trial licenses for up to 256 channels. Note that the unused trial licenses in a VAST substation will not be available for a managing VAST server. The 32 free licenses will be available for a stand-alone VAST server only.
- 11. The software license verifies its availability on a machine by checking the computer's main components, e.g., GPU or memory. If a VAST server has several of its main components replaced, the software license may become invalid. Note that users can only change 2 components on a substation (server components - CPU/Memory/Graphics card/Network card/Main board).
- 12. For an older VAST installation containing a VAST substation licensed through the dongle, the 32 free channels will be automatically added to the total number of licensed channels. One substation comes with 32 free channels. The added number of licensed channels will be-come available for the managing VAST server.

# VAST LiveClient Configuration

## Activating the VAST LiveClient and Logging in to a VAST Server

VAST LiveClient allows you to monitor live video from cameras managed by the VAST Server; it is also the main user interface for server function control.

Follow the steps below to activate VAST LiveClient:

- 1. Run the VAST LiveClient program using the shortcut on desktop.
- 2. A Login window will pop up. Enter the information as shown below:
  - If you want to login to a remote VAST Server, enter the IP Address, User Name, Password and the Communication Port of the target server correctly. Click Login to log in to the target server.
  - If you want to login to a local host that is running VAST Server, check the Login local station checkbox, then the local IP Address will be displayed automatically. Enter the User Name, Password, and Communication Port of the local server for login. Click Login to login to the target server.

🔮 VAST LiveClie	ent 💼 💌		🔮 VAST LiveClie	ent 💼 💌
🗖 Log in local st	ation	(	🔽 Log in local st	ation
Address:	192.168.6.133		Address:	127.0.0.1
Authentication:	Basic Account 🔹		Authentication:	Basic Account 🔹
User Name:	admin		User Name:	admin
Password:	•••••		Password:	•••••
Port:	3454		Port:	3454
Proxy Settings			Proxy Settings	
Log in	Cancel Hide <<		Log in	Cancel Hide <<

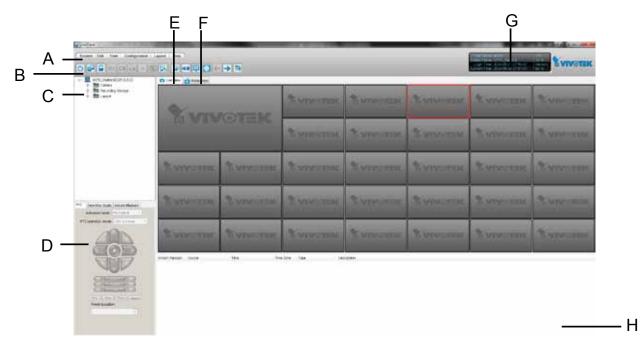
 Please refer to page 132 for how to enable and configure Windows AD accounts.

- 3. The VAST LiveClient monitoring window will prompt.
- If your network environment need to set up proxy, click More >> to extend the login window, then click Proxy Settings to open the dialog. Then enter related information to link to your proxy server.

< VAST LiveClie	ent 🗈 🗶	💙 Proxy Settings
☑ Log in local st	ation	Enable Proxy
Address:	127.0.0.1	Address:
Authentication:	Basic Account	Port: 80
User Name:	admin	User Name:
Password:	•••••	
Port:	3454	Password:
Proxy Settings		OK Cancel
Log in	Cancel Hide <<	

• Available functions of the VAST LiveClient program will be enabled according to the role of your login account. For more details about the privileges of the user account, please refer to **How to Manage User Accounts** on page 129.

# **VAST LiveClient User Interface**



- A. Menu bar B. Quick access bar C. Hierarchical management tree
- D. Camera control panel (PTZ / Two way audio / Instant Playback control panel) E. Live view window F. Matrix view window G. Status panel H. Alarm window

#### Menu Bar

System Edit View Configuration Layout Help		
Menu Item	Drop-down Options	
System	Lock / Enable Click On Image (Disable Click On Image) / Language / Second View / E-map / Launch Playback / Logout / Exit	
Edit	Manually Begin Recording (Stop Manual Recording) / Snapshot / Print / Record to EXE (3GP, AVI) / Snapshot Zoomed Image / Print Zoomed Image / Find	
View	Logical Tree view/ Device Tree view/ PTZ Panel / Two Way Audio Panel / Instant Playback Panel / Alarm Window / Full Screen / Minimize / Matrix View	
Configuration	Camera Management (Insert Camera / Update Camera / Delete Cameras / Batch Insert Cameras / Camera Configuration) / Station Management / Logical Tree View management / IO Box Management / User Management / Association Management / Alarm Management / Virtual Matrix Management (Matrix Management / Matrix View Settings) / Station Settings (General Settings / Network Settings / Recording Storage Settings / Recording Schedule Settings / Scheduled Backup Settings / Server Settings / Relay Settings) / Client Settings (Snapshot Settings / Recording Settings / View Settings / General Settings / Joystick Settings / Proxy Settings / PiP Settings) / Video Enhancement (Basic Image Adjustment / Defog)	
Layout	Start Rotating (Stop Rotating) / Save to / Delete / Choose	
Help	About / License	

### **Status Panel**

User Name: admin	CPU
Station Name: VVTK_Station1	35 %
Login Time: 2014-04-22 10:23:09	Memory
Current Time: 2014-04-22 11:14:54	61 %

#### User Name

Station Name (IP Address) Login Time (yyyy-mm-dd hh:mm:ss) Current Time (yyyy-mm-dd hh:mm:ss)

# **Help Panel**

The Help panel provides software revision information and the access to the associated iViewer software in either the iOS or Android version. You can also click on the License button to review the number of cameras and manageable substations.

If necessary, you may also use the Import License button to activate the functionality you separately purchased or generate a license request.



Irial version (Remaining time: 5	52 days)		
Name	Value	Description	
Camera number	256	Maximum number of the total camera cha	
Other brand camera number	10 Maximum number of the other brand camer		era.
Substation number	0 Maximum number of substations for this licen		
	U	Maximum number of substations for this a	cense.
(		Maximum number of substations for this a	cense.
		м.	

#### **Device Pack Update**

A Device Pack consists of information of new VIVOTEK cameras or the updated information for previous models, such as various configurations including resolutions, FPS, DI/DO, etc. For example, some panels, such as the PTZ panel, may not be available for a new PTZ camera. Your VAST server might not recognize the features of the latest VIVOTEK cameras. With the Device Pack, you can configure and implement the latest VIVOTEK models without the need to upgrade the entire VAST software to acquire the associated information. Please visit: http://www.vivotek.com/web/product/productdetail.aspx?Model=VAST. For configurations not specified in the device pack, you can still open a web console with individual cameras to change their configuration.

You can consult VIVOTEK's technical support for the latest Device Pack [CSV files (\*.csv)], and use the Update... button in the Help window to replenish camera information. The update information will be displayed, and the update process is completed almost immediately.

Device Pack Update	•	
Old version:	1.0.2	
New version:	1.0.3	
Ready for update		
		Update Cancel

### **Quick Access Bar**

٢		₽•⊗₽₩₩₽¤←→ħ
lcon	Function	Description
٥	Exit	Exit the system
	Logout	Log out from the current station
	Lock	Click to Lock the system for security concerns ( I Unlock the system)
	Volume	Adjust the audio volume of the current video (
	Snapshot	Capture pictures from the focus live video cell
	Print	Print out the pictures of focus live view window or all live video cells
•	Record to Media	Record media in EXE/3GP/AVI format (
	Alert Sound	Play sound when an event triggers
Đ,	Switch Screen	Switch the current window to another screen
#	Adjust SVC Level	Dynamically adjust the SVC control over frame rates
152	Remove All Connections	Remove all live videos from the live view window
₿	Layout	Change the layout of the live view window
	Full Screen	Maximize the live video cell
<b>(</b> -	Page Up	Switch to the previous live view page
>	Page Down	Switch to the next live view page
1	Start / Stop Rotating	Start or stop live view layout rotating
r		

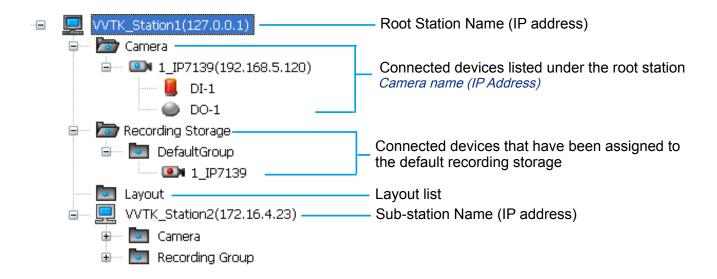
Some buttons will be disabled if the selected devices do not support the corresponding functions.

### Live Video Monitoring Window

The "VIVOTEK" logo is displayed where no camera has been assigned to a video cell. The red frame ( \_\_\_\_\_) represents the current selection.

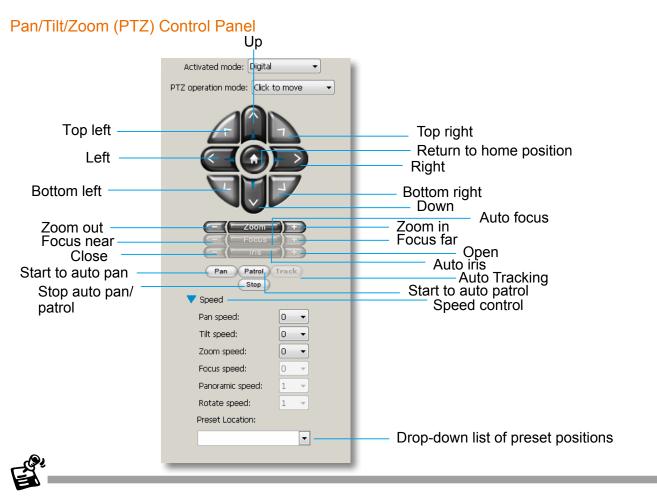


### **Hierarchical Management Tree**



lcon	Description
	A station (The host that's installed with VAST Server)
	A station (The host that's installed with ST7501 Server)
💷 / 💷	VIVOTEK fixed network camera (or ONVIF cameras) Red dot signifies that the camera is recording.
æ ( 🏝	VIVOTEK PTZ network camera Red dot signifies that the camera is recording.
🖳 ر 💽	VIVOTEK dome network camera Red dot signifies that the camera is recording.
😍 ر 🌏	VIVOTEK fisheye network camera Red dot indicates that the camera is recording.
🥽 / 🔝	VIVOTEK video server Red dot signifies that the video server is recording.
📕 ı 🛄	Digital input on / off
🥌 ı 🌰	Digital output on / off
	A layout of the live monitoring window
2	A station that's not able to be connected currently.
<b>×</b>	A device that's not able to be connected currently.

### **Camera Control Panel**



- There are two types of PTZ control: Digital (E-PTZ for megapixel cameras) and Mechanical (PTZ cameras or fixed cameras with camera control via RS-485). If the connected cameras support PTZ/E-PTZ function, the PTZ option(s) will appear on the drop-down list. For detailed camera control settings, please refer to the user's manual that came with VIVOTEK network camera.
- Click System > Enable Click On Image to use the mouse for the control of the PTZ and E-PTZ functions in the video cells for linked cameras. An icon () will appear in the video cell as shown below.

System Edit View C	1_FD8161	2010/08/03 AM 11:25:2
Loc <u>k</u> Ctrl+L Enable Click On Image Language ►	-	
Second <u>V</u> iew <u>E</u> -Map Launch <u>P</u> layback		
Logou <u>t</u> E <u>x</u> it	1	A dia St

• You can control the PTZ function through joystick as well. For more information regarding to the joystick configuration, please refer to instructions on page 213.

VIVOTEK's latest SD8xxx speed dome series supports the **Continuous Move** control. The **"Click to move"** enables one movement by every mouse click on the PTZ buttons.

When Continuous Move is enabled from the PTZ panel, you can click and hold down the mouse button on an arrow key to command the camera to continue moving to that direction. The move will stop when you release the mouse button. Also, if the pan/tilt/zoom/focus speed is configurable for a PTZ camera, you can use the **Speed** button to display the speed options: pan, tilt, zoom, focus, panoramic, and rotate speeds.

For fisheye cameras, two more options will be available: Panoramic speed and Rotate speed. These two options apply to the onscreen control for the Panoramic and Regional views.



In addition to the PTZ panel, the following hot key combinations are also available:

Ctrl + NumPad (PTZ control)					
Up	Ctrl + 8				
Left	Ctrl + 4				
Home	Ctrl + 5				
Right	Ctrl + 6				
Down	Ctrl + 2				
Focus (Far - Near)	Ctrl + 1	Ctrl + 3			
Zoom (Out - In)	Ctrl + 7	Ctrl + 9			
Pan	Ctrl + /				
Stop	Ctrl + *				
Patrol	Ctrl + -				

Preset locations (pre- configured by users)	Ctrl + 0~9 (number keys above the alphabetic keys)
Full screen	Ctrl + F
Single view	Ctrl + V
Previous layout page	Alt + PageUP
Next layout page	Alt + PageDown
First layout page	Alt + Home
Last layout page	Alt + End
Snapshot	Ctrl + S
Stop alarm	Ctrl + A
Mute audio from current	Ctrl + M
stream	
Start/ Stop rotation	Ctrl + O

### Two Way Audio Control Panel

The two way audio function allows the user to remotely communicate with people nearby the network camera.

	Talk Panel	Selected device that can use the two way audio function
Click to talk ——	Click to play sound from the cam Talk Play Sound Clear All Client Settings Sound File :	era Remove all cameras from the Talk Panel Select sound from the file list
છ્ય	C:\Program Files\Vivotek Inc\S1	<ul> <li>Click to play the selected sound on the client's side</li> </ul>

- For detailed information about **How to Use the Talk Panel**, please refer to page 186.
- Only cameras that come with the two way audio function can be added to the Talk Panel.

### Language Selection

VAST currently supports multi-lingual user interfaces including: English, Česky, Deutsch, Español, Farsi, Français, Italiano, 日本語, Português, Русский, 簡体中文, 繁體中文. If you want to select another language for the interface, please click **System > Language** on the menu bar to select the desired language. Please note that if you want to change the language option, a message will prompt to remind you to restart the system.

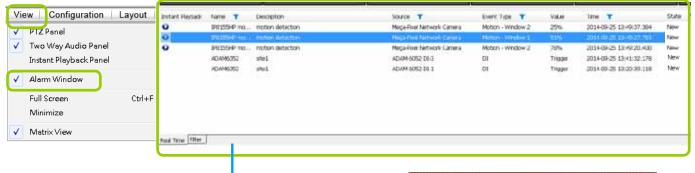


## **Alarm Window**



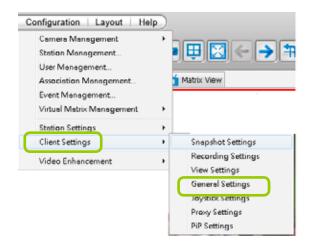
- Only the alarm-related messages will be displayed in this window. An Alarm is a configuration consisting of triggers and reactions set to activate during a specific period of time. The Alarm-related settings is configured in **Configuration > Alarm management**. See page 139 for more information.
- For the event messages of the overall system operation, please refer to the Playback > Log viewer.
- If a VAST server is reset, the Alarms will disappear from the Alarm window. You can go to the Playback utility and use the **Alarm search** function to retrieve the past events.

Click **View > Alarm Window** to open a window showing the real-time information for event triggers. If you want to hide this window, deselect this option on the menu bar.



Event Window

The default Alarm window is set to be fixed on the bottom of the LiveClient. If you want to change the Alarm window as a popup page, please open the **Configuration > Client Settings > General Settings** window to switch the display modes.



General Settings			
System Settings			
Automatically log in after logging in to op	erating syst	em	
Automatically display in full screen after k	gin		
Auto add newly-inserted camera to vide	cel		
Retrieve RTSP stream on specified port:	554	1	
Connect substation streaming via relay			
vent Settings			
Enable live event notification			
Enable alert sound(s)			
Event window mode : 🖷 Foed			
Ο Ρορωρ			
totation Settings			
Enable rotation after login			
Rotate the page every 10	secon	d(s) (3 ~	999)
Display Settings			
Enable auto stream sze: Quality first			
Enable de-Interlace function			
Enable Instant Replay on video cell			
Default replay length: 30 seconds +			
Local streaming buffer time: 0	millisecond	(s) (0 ÷ 1	.0000)
		154	

The Event Type field in the Alarm window shows the event category and another field Value displays the percentage of motion in the detection window. You can go to the Configuration setting page of the connected device to set the percentage.

Enable motion detection



### Alarm Filter

On the Alarm panel, a list of alarms will be displayed. Click on the attributes with a funnel icon.

Insta	nt Playback 🛛 I	Name	T	Description	Source	T	Event Type	T	Value	Time 🝸	State	T	
Q	:	SD DI			SD8161 D	0I-2	DI		Trigger	2015-07-31 11:50:36.426	New		
0	:	SD DI			SD8161 D	)I-2	DI		Trigger	2015-07-31 11:50:24.722	New		
Q	:	SD DI			SD8161 D	)I-2	DI		Trigger	2015-07-31 11:50:13.750	New		

The Alarm Filter window will prompt. Use the Name, Time selector, and the State checkboxes in the Source and Event Type panes to specify what kinds of alarms will be displayed.

💙 Alarm Filter	Station of the	<b>—</b> X—
General Name: State New Assigned In Progress Resolved Closed Later Reject Ignore	Source	Event Type  Category  Camera Events  Camera Status  Substation Connection St  Category  External Device Events
Time         Start Time:         2015/7/31 ▼         End Time:         2015/7/31 ▼         11:56:32 ▼		< <u> </u>
		Apply Cancel

For example, you can set up a filter to display the alarms with a name associated with a specific camera, such as "bullet on the corridor." The name of the alarm is configured in **Configuration** > **Alarm** management on page 139.

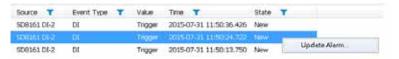
💙 New Alarm			×
General >>	Trigger >> Action	n >> Schedule	>> Detail
✓ Enable this a ✓ Enable live r			
Name:			
Description:		*	
Trigger Period:	5 (sec) 0 —	30	
	Back	lext Finish	Cancel

Use the Filter tab at the bottom of the Alarm window to display a different sorted result.

0		IP8155HP mo	motion detection
0		IP8152V-3	ddddd
Real Time	Filter		

### Alarm State

Left-click to select an alarm, and then right-click to display the **Update Alarm** button.



You can change the alarm state from the pull-down menu. For example, if someone has already been sent to check out the situation, for example, an intruder broke in through a window, you can select the Assigned status. A 1024 bytes decription can be added into the alarm Note for

Alarm Information		Alarm	Handling	
Name: * 50 D0 Description: Source: * SDB161 D0-2 Event Type: * D0 Value: * Trigger Time: * 2015-07-31 11:50:36.426	*	State: Note:	New New Encrosed In Progress Resolved Gosed Later Resolt Jamone	
	·* :			÷

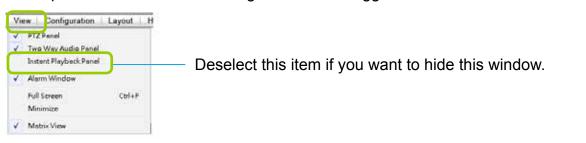
future reference.

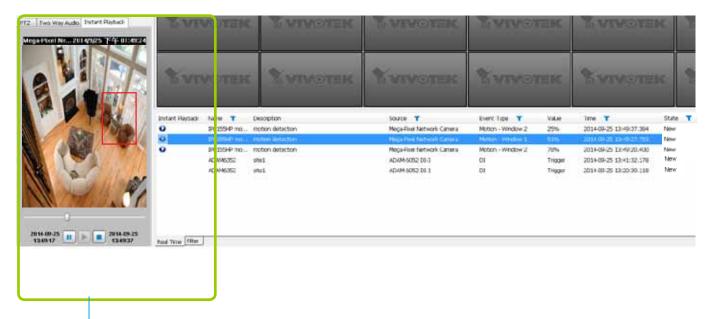
If an alarm is proved as a false alarm, the alarm can be designated as Ignore or Resolved, and so on.

The different alarm states can also be used as the filtering conditions in the Alarm filter. Single or multiple states can be selected in the filter. For example, to display the Resolved alarms only, use the Resolved state as the filter.

# **Instant Playback**

Check **View > Instant Playback** to open the window on the panel. The entries listed in the Event panel are the short recordings made from triggered events.





Instant Playback Window with a slide bar, play, pause, and stop function

The recorded media that was triggered by an event will be indicated with a playable 👽 icon.

You can **double-click** an event on the list to playback the recorded video. Each event contains a video clip of 20 seconds in length. (The default recording data of an event is 20 seconds. For more information about event recording, please refer to page 159.)

## **Instant Replay**

If a camera is currently recording to the VAST server, then a Replay button will be available at the lower left corner of its view cell. This allows you to immediately retrieve the video recording in the past few seconds or minutes.

The Instant Replay function enables you to quickly retrieve videos of what has just happened (20 seconds to 15 minutes ago), without the need to open the Playback utility for the past videos.

## Prerequisites for Instant Replay:

- 1. The function is enabled by default, only available on a LiveClient installed on a PC.
- 2. There must be recorded videos of the immediate past. If the video streams from a camera were not recorded, you can not retrieve videos using the Instant Replay function.

# 

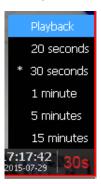
- 1. When using the Instant Replay function and you change the stream number on a video cell, the Instant Replay will be interrupted.
- 2. The Instant Replay will also be interrupted when the time comes for a rotation of Live View pages. For example, if you have multiple Live View pages and you set up a rotation of these pages by every 10 seconds, page swap (rotation) still has a higher priority even if you are viewing the Instant Replay.

## How to Use:

- 1. On a selected view cell, mouse over to the lower left corner. A Replay icon will appear.
- 2. Click on it to display the Replay control bar. Click on the play button.



3. The default queue length is 30 seconds. You can click on the number on the right to change the queue length.



The Playback option allows you to directly open the Playback utility. A maximized single view window will open. In this single view, previous recording will be played, but, unlike the smaller Instant playback pane, the playback will continue until manually stopped.

This playback mode is not memorized as the norm the next time you use the Instant Replay function.

The queue length configuration stays with the view cell, and it will not go unless you remove and insert the camera again.

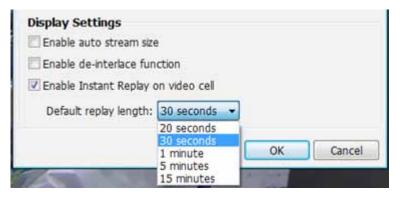
- 4. To stop the Replay and return to the Live View, click on the Return to Live button.
- 5. On a Replay view cell, you can apply the same Snapshot, Print, Single view and Full screen control as those on a normal view cell. You can also right-click to display the Display Mode and Video Enhancement functions.

Click and drag the playhead to skip or move to a different point in time on the playback.

An active Replay view cell is indicated by the Replay text indicator and the time of occurrence of the current playback.



To change the default Replay settings, open the Configuration > Client Settings > General Settings menu.



## Audio Control

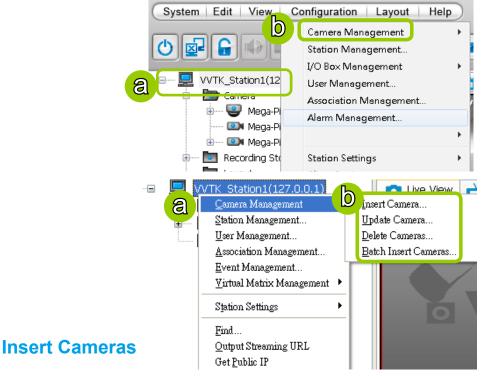


The audio function will be enabled if the device is equipped with an internal or external microphone. For detailed audio control settings, please refer to page 138.

# How to Manage Devices

Please follow the steps below to open the Camera Management window:

- a. Select the station from the hierarchical management tree.
- b. Click **Configuration > Camera Management** on the menu bar (or **right-click** the station, then select **Camera Management**).
- c. Then you can choose to insert, update, delete, or batch insert cameras.



Please follow the steps below to add devices to a station:

- a. Click **Configuration > Camera Management > Insert Camera** on the menu bar (or **right-click** the device/station, then select **Camera Management > Insert Camera**).
- b. The **Camera Management Insert** window will pop up. The device tree managed by the station will be displayed in the left Camera List window.
- c. Enter the **Camera Name**, **IP address** (or you can enter an **IP address** and check **Auto** to get a camera name automatically) and configure the **Connection Settings**.
  - If the camera is on the LAN, you can click Search Camera to detect all VIVOTEK network cameras on the LAN. A Camera List window will pop up and show a list of detected cameras on the LAN. On the top of Camera List window, you can select "List the cameras which are not inserted" or "List all cameras". The items listed below will then change accordingly. You can click Mac, IP Address, Model, HTTP port to sort the items. Then select a camera from the list to insert to the station.
  - The streaming protocol determines how the live video stream is sent from the camera to the local computer. Please refer to the note on the next page for a detailed description of each transmission protocol. Specify the recommended live monitoring stream for the device. If you want to change the live viewing stream, please refer to the next page to update the camera settings. Or you can **right-click** the desired cell, then select a desired stream. Please refer to Dual / Multiple Streams on page 106 for a detailed illustration.
  - Click Detect Model to detect the device. The Model Name and MAC Address of the device will automatically be displayed in the respective fields if the connection is successful.
- d. If you want to make sure you are connected to the target device, click **Connection Test** to preview the live video from the device.

Camera Management for VVTK_Station1	- Insert				
Camera List	Brand:		07·47·484	3 下午 04:48:01	
	Branu:	VIVOTEK	02.72.70		
	Module:	· ·	Pause Clear		
	Camera Name:	🛛 🖾 Auto 📊	201		
	Address:	192.168.6.175 🔇 🔍 🚺		- 19A DI	
	Model Name:	IP8162			
	MAC Address:	0002D1157B40			
				Connection Test	Q
	Connection Se	ttings Recording Settings			
	User Name:		Password:		
	Configuration	Protocol: HTTP 🔻	Configuration Port: 8	0 🍦	
	Streaming Pro	otocol: TCP 👻	Channel: 1	A V	
	Initial C	Stream: 1			
	🔽 Automatical	y add camera into recording stora	ge DefaultGroup	•	
	<u></u>		Insert	: Close	
<b>C</b>	earch Cameras	-			×
0	List the cameras List all cameras	which are not inserted		Refr	esh
Ca	amera List				
	ИАС	Address	Model	HTTP Port	
	0-02-D1-15-7B-4		IP8162	80	
	)0-02-D1-81-73-0	3 192.168.6.101	FE8173	80	

- If you want to use "HTTPS Port", please enable the HTTPs settings on the configuration page of the Network Camera first.
- The characteristics of each protocol are shown in the following table:

Protocol	Description
UDP	UDP uses a simple transmission model without implicit hand-shaking dialogues for guaranteeing reliability, ordering, or data integrity. Thus, UDP provides an unreliable service and data grams may arrive out of order, appear duplicated, or go missing without notice. This protocol allows for almost real-time audio and video streams. However, network packets may be lost due to network burst traffic and images may be obscured. Activate UDP connection when occasions require time-sensitive responses and video quality is less important.
ТСР	TCP provides the service of exchanging data reliably directly between two network hosts, whereas IP handles addressing and routing message across one or more networks. In particular, TCP provides reliable, ordered delivery of a stream of bytes from a program on one computer to another program on another computer. This protocol guarantees the delivery of streaming data and thus provides better video quality. The downside with this protocol is that the real-time effect is worse than that with UDP for a narrower bandwidth.
HTTP	HTTP is a networking protocol for distributed, collaborative, hypermedia information systems. It's the foundation of data communication for the World Wide Web. This protocol allows for the same quality as TCP and the users need not open a specific port for streaming under some network environment. Users inside a firewall can utilize this protocol to allow streaming data through.
HTTPS	This protocol enables authentication and encrypted communication over SSL (Secure Socket Layer), which protects streaming data transmission over the Internet on higer security level.

#### e. Configure Recording Settings:

Connection Settings	Recording Settings					
-Basic Settings						
Recording Stream:	1	Enable seamless recording				
Pre-event Time:	10 🗧 seconds(3-15)					
Post-event Time:	10 🚔 seconds(10-60)					
Activity Adaptive Stream						

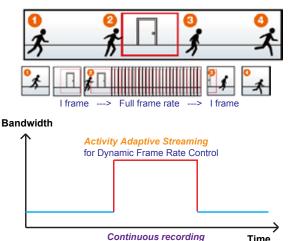
- Recording Stream: By default, the stream source of the recording stream is stream 1, if you want to change it later on, please refer to the previous page to update the camera settings (Update Camera).
- Pre-event time: Enter a number to decide how much time to record before an event is triggered.
- Post-event time: Enter a number to decide the duration of recording after an event is triggered.

Connection Setting Recording Settings	Pre-event time Post-event time
Recording Stream: 1	pre- 10 sec. 10 sec.
Pre-event Time:	Trigger Activation
Post-event Time: 10 🚔 seconds(10-60)	
Activity Adaptive Stream	
Active	

For example: If both the Pre-event time and Post-event time are set to 10 seconds, a total of 20 seconds of video will be recorded if an event is triggered. This function is supported by the buffer area on a VAST server.

Note the following with the associated configuration:

- The Pre-/Post-event time configuration only applies to event recording.
- The Activity Adaptive Stream (a.k.a., AAS) only applies to the Continuous Recording.



Activity Adaptive Stream (active if possible): Check this item to enable activity adaptive stream recording. For cameras that come with multiple streams features, users can make use of activity adaptive streaming for dynamic frame control.

If you check Activate Activity Adaptive Stream, the VAST server will record full-frame-rate video only when an event is triggered on the camera; otherwise, it will only request the I frame data during normal monitoring, thus effectively save lots of bandwidths and storage.

Camera Management for VVTK_Station1 - I	nsert		x
Camera List	Brand:	VIVOTEK - 02:42:40	04:48:01
h	Module:	- V Pause Cicor	
g	Camera Name:		
	Address:	192.168.6.175 V A	- 17804
	Model Name:	IP8162	
	MAC Address:	0002D1157B40	
		Connect	ion Test
	Connection Set	ettings Recording Settings	
	User Name:	Password:	
	Configuration F	Protocol: HTTP   Configuration Port: 80	* *
	Streaming Prot	otocol: TCP  Channel: 1	
	Initial Viewing S	g Stream: 1	
ſ	🔽 Automatically	ly add camera into recording storage DefaultGroup	•
		Insert J	close
			0000

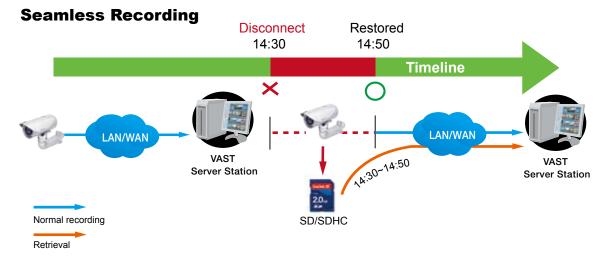
- f. The device will automatically be assigned to the default recording group. Deselect the item if you want to cancel this setting.
- g. You can deselect the "Auto" checkbox behind the **Camera Name** entry, and manually enter a name of your choice, such as "East alley bullet." This name will be used as the folder name for the recorded video files. An index number will still be appended to the folder name. Note that if this name is changed when the recording is taking place, the configuration change will not take effect until the next day.
- h. When all settings are completed, click **Insert** to add the device to the station. The device will be displayed under the Camera List on the left.
- i. To insert additional devices to the station, repeat the above steps.
- j. When completed, click **Close** to exit the camera management window.
- k. Back to the main window, you will find the newly-inserted devices displayed under the station and the live video in the video cell.



## **Seamless Recording**

Enable seamless recording

Seamless Recording safeguards critical videos in the occurences 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 VAST server can automatically resumes the recording. More remarkable is that, a VAST 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.



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/hadware 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.

Camera Management for VVTK_Station1		🙀 - Tips:
Camera List	Camera Name: Mega-Pix 2011/02/14	4下午 04:55:57 資 11 [25.
VVTK_Station1(127.0.0.1)	Address:	Try out the <b>Detect model</b> button on the Insert Camera page if the Seamless Recording checkbox does not appear.
	Connection Settings Recording Settings	Brand: VIVOTEK 💌
	Basic Settings Recording Stream: 1 2 Enable seamle	Strecording Camera Name: ZAuto
	Pre-event Time: 10 🚖 seconds(3-15)	Address: 192.168.6.207 🔇 🔍
	Post-event Time: 10 🚭 seconds(10-60)	Model Name: MS8391-EV
	Activity Adaptive Stream	5) MAC Address: 00028391C319
	Automatically add camera into recording storage DefaultGroup Insert Insert	M Cose



- When the SD/SDHC/SDXC card storage space is full, cameras will stop recording. When the network conneciton between VAST server and cameras is restored, videos in the SD card will be transmitted back to the VAST server. Note that the videos that were not recorded during the time when the network was disconnected will not be transmitted.
- If the videos on the cameras belong to those that are about to be erased within 24 hours (e.g., for the lack of storage space on a VAST server), those videos will not be retrieved.

### Limitations:

- Retrieving video fragments from a camera can momentarily double the throughput of normal video streaming.
- Video streams recorded using the MJPEG codec is not supported by Seamless recording.
- Seamless recording can only take place from a camera with 1 video stream recorded to a maximum of 3 VAST servers.

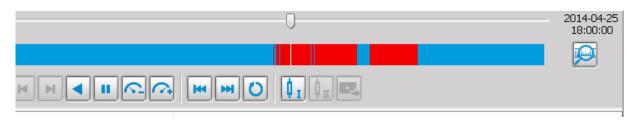
### **Onscreen Elements for Seamless Recording:**

- The associated icons will appear in the Liveview, popup window on e-Map, and the Matrix view. The status icon appears on the upper right of the view cell.
- Below is the description of the Seamless recording statuses and the indicative icons. Normally the video fragments will be retrieved first, and then the event log:

()	Currently not recording video from camera, but is retrieving data from camera due to previous disconnection.
<b>()</b>	Currently not recording video from camera, but is retrieving event log.
۱	Currently recording video to system as well as retrieving data.
0	Currently recording video to system as well as retrieving event log.

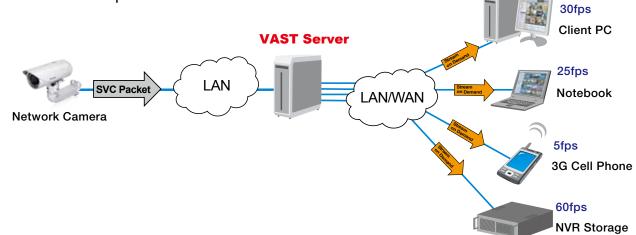
After a period of time, the gaps of recording (those blue lines or blocks representing network interruptions during the recording) should be gradually stitched up. It is, however, system integrators' responsibility to build a reliable network. Additional bandwidth should also be available for retrieving fragmented recordings from the camera side.

The VAST checks for the need for retrieving framented videos by every one minute. If the retrieval failed due to some network faults, the server will re-try the retrieval tasks later on.



### **Enable SVC**

If the camera to-be-added supports the latest SVC (Scalable Video Coding) feature, select the SVC checkbox to enable the related control. The SVC feature enables streaming of videos for multiple clients from one single set of layered IP packets. Designed for saving bandwidth and CPU load on client stations, the frame rate of a video stream appearing through a view cell can be individually adjusted. This feature applies when an administrator experiences unstable video streaming due to the lack of network bandwidth, less-than-ideal hardware, or during an occurrence of network problems.



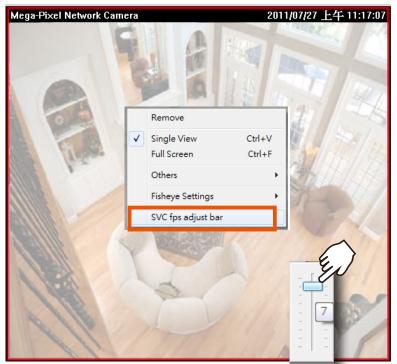
The VAST server (rev. 1.6.1 and later) automatically negotiates with a camera and determines whether a network camera comes with the SVC feature.

To configure the SVC-related feature:

1. When inserting a new camera into your configuration, select the streaming option, usually the stream #1.

😋 Camera Configuration		
Camera List	Video Audio Remote Focus	NTP Settings Panoramic PTZ
UVTK_Station1(127.0.	FOV:	Fisheye mode (MAX 15fps)
🦰 🥁 Mega-Pixel Netwo Mega-Pixel Netwo	Video stream:	Stream 1 🔹
28x Zoom Speed	Codec type:	H.264
Mega-Pixel Netwo	Frame size:	H.264 SVC
	Maximum frame rate: Video quality:	
	video quairty.	Constant bit rate
< •	Copy settings to:	Save Close

2. Right-click on the view cell of an SVC-enabled camera. Select SVC fps adjust bar.



3. A slide bar will appear above the view cell. Click and drag the slide bar. A numeric indicator will display the current selection. See below for the frame rates represented by the numeric indicator.

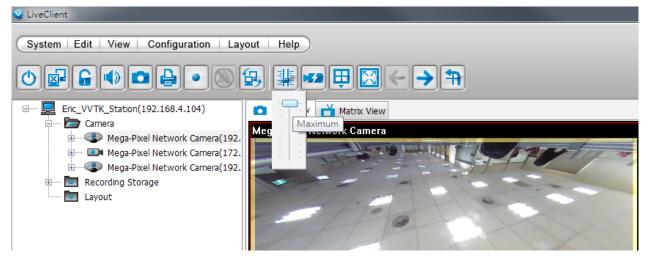
Indicator	Frames per second (fps)	
Maximum	30	
7	26	
6	22	
5	18	
4	12	
3	8	
2	4	
1	1	
Minimum	1/4	



## NOTE:

The SVC feature only applies to H.264 and MJPEG streams. It is not applicable to MPEG-4 streams. Please refer to Configuration -> Media -> Video for individual stream settings.

If you have multiple SVC-enabled cameras, you can enable a collective setting via the **Adjust SVC level** button on the tool bar. The frame rate selected here will then apply to all view cells on the VAST LiveClient console.



Please note that the SVC related setting can not take effect while the LiveClient station is running the Layout Rotation. Stop the layout rotation before configuring the SVC function.

While you save your bandwidth for live viewing, you can still record full-frame-rate video by changing the recording setting. For example, you can enable resource-saving SVC on stream #1 and configure stream #2 to be recorded with full details, in terms of frame size, frame rate, and video quality.

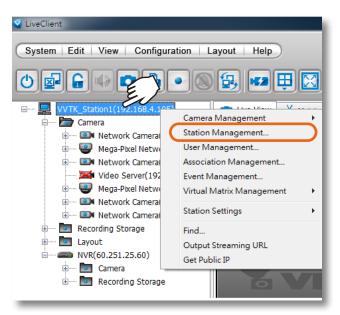
Camera Management for EricVAST_Station1	1 - Insert
Camera List	Camera Name: Auto Address: 192.168.4.134 Auto Model Name: IP8352 MAC Address: 0002D1117A3D
	Connection Settings Recording Settings          Basic Settings         Recording Stream:       2         Pre-event Time:       10 $\stackrel{\frown}{\times}$ seconds(3-15)         Post-event Time:       10 $\stackrel{\frown}{\times}$ seconds(10-60)
	Activity Adaptive Stream Active if possible Min. Pre-event Time: 3 seconds(2-5)
<	Automatically add camera into recording storage     DefaultGroup     Insert     Close

## Insert NVR (Network Video Recorder)

 Before you can include an NVR system into your current configuration, you should enable the corresponding configuration on a web management console with the NVR system. In Configuration > System > VAST, click on the Enabled checkbox and enter a password for authentication.

		×
•		
-	HTTP Port:	50
A	HTTPS Port:	443
	RTSP port.	554
	CMS & Wewer:	Allow access
÷		This password is only for CMS connection. Wewer login account is the same as NVR.
8		Port: 3454 CMS password:
		Confirm password:
DONS		
Service		
		R
ana .		Apply

2. Return to your VAST management screen. Left-click to select your VAST station on the navigation panel, and then right-click to display and select "Station Management..."



(

3. The Station Management window will prompt. Enter the **Address**, **Password**, and check if the **Communication Port** match that you set for the NVR. Click on the **List Sub-Station Hierarchy** button.

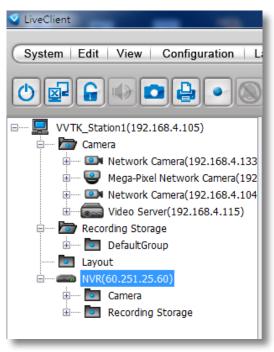
Station Management for VVTK_Station1	
Station Tree for VVTK_Station1	Address: 60.251.25.60 Password: ••• Communication Port: 3454 List Sub-Station Hierarchy Insert Search Hierarchical ma nent tree
Delete	Update Close

After a brief delay, the NVR server will be listed in the column. You may also use the **Search** button to locate similar devices if they are reacheable in your local area network.

4. You can then click the **Insert** button to add the NVR server to your configuration. When done, click the **Close** button.

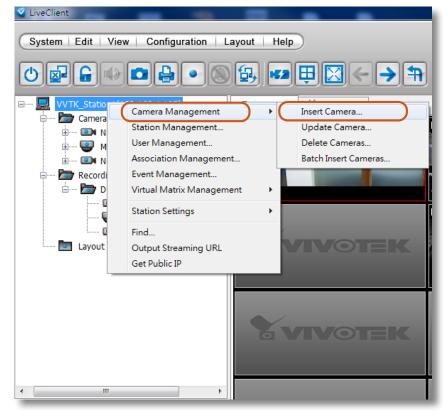
Station Management for VVTK_Station1		×
Station Tree for VVTK_Station1	Address: Password:	60.251.25.60
Station Management Insert Station Elapsed time		3454 Insert Search nt tree 5.60)
Delete		Update Close

5. The NVR will appear in the navigation panel along with its subordinate cameras.



## **Insert a Video Server**

1. Left-click on your VAST station, and then right-click to display the **Camera Management** command. Let your cursor stay on the command for a second and then move to the **Insert Camera** command. Click on the command to open its configuration window.



2. See below for the steps to insert a Video Server along with its subordinate cameras.

Camera Management for VVTK_Station1 - 3	Insert
Camera List	Camera Name: 2 Auto Address: 192.168.4.115 C Address: 192.168.4.115 A Address: 00ABCDABCDEF A Address:
	Connection Settings User Name: root 4 Password: •••••• Configuration Protocol: HTTP Configuration Port: 80 * Streaming Protocol: TCP Channel: 1 * Initial Viewing Stream: 1 *
4	6 Insert Close

- 2-1. You can deselect the **Auto** checkbox to enter a name for the Video Server. If set to Auto and your video server already has a name, that name will be displayed in your device list.
- 2-2. Enter the **Address** of the video server or use the **Search** sutton to open a Search window.
- 2-3. If you enter its address and it is found after you click on the **Detect Model** Substitution, its **Model Name** and **MAC Address** will be listed.
- 2-4. Before you click the Detect button, you should enter the **User Name** and **Password** for access to the video server. You should also confirm the **Configuration Protocol**, **Configuration Port**, **Streaming Protocol**, and the rest of the networking parameters.
- 2-5. You may select or deselect the checkbox in front of the recording storage option or use the pulldown menu to select the default group or a pre-configured storage group.
- You might use the **Connection Test** button to verify if the stream comes from the device you prefer. 2-6. Click **Insert** to include the video server to your configuration.
- 2-0. Olick **insert** to include the video server to your conliguration

The Video Server should now be listed on the Camera List.

You can also use the **Search** button to poll the local area network for VIVOTEK's devices. You can select to list all cameras or list those that have not been included in your current configuration. Click on a device, and its detailed information will immediately appear in the **Camera Management** 

window on the left. For recording settings, please refer to page 83 as previously described.

List the cameras which a	are not inserted		Constant in the
List all cameras	1		Refresh
amera List		2	
MAC	Address E	Model	HTTP Port
00-AB-CD-AB-CD-EF	192.168.4.122	V58401	80

# **Update Devices**

Please follow the steps below to update a device via Camera Management window:

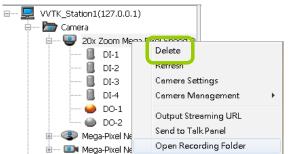
- a. Click Configuration > Camera Management > Update Camera on the menu bar (or right-click the device/station, then select Camera Management > Update Camera).
- b. The **Camera Management Update** window will pop up. The device tree managed by the station will be displayed in the left Camera List window.
- c. Select a device from the list you want to update. Its related information will automatically be displayed in the corresponding fields in the Camera Management window. Then you can modify **Connection Settings** and **Recording Settings** of the device.
- d. After modifying the settings, you can click **Connection Test** to preview the live video from the device.
- e. When all settings are completed, click **Update** to enable the settings.

	20x Zo Delete Camera Settings Camera Settings Camera Management Output Streaming URL Send to Talk Panel Mega-f Open Recording Folder	Insert Camera Update Camera Delete Cameras Camera Configuration
Camera List Camera	Jpdate         Brand:       VIVOTEK         Module:       -         Camera Name:       20x Zoom Mega-F         Address:       192.168.6.143         Model Name:       SD8363E         MAC Address:       0002D12150FB	E Lonnection Test
	User Name: Configuration Protocol: HTTP  Streaming Protocol: UDP Initial Viewing Stream: 1	Password: Configuration Port: 80
< •		Close

# **Delete Devices from the VAST Server**

Delete a device:

**Right-click** the device on the device tree, then select **Delete**. A dialog box will pop up. Click **Yes** to delete the device along with the recorded data; click **No** to delete the device but retain the recorded data; click **Cancel** to cancel the delete action.





- Delete more than one device at a time:
- a. Click **Configuration > Camera Management > Delete Cameras** on the menu bar (or **right-click** the device/station, then select **Camera Management > Delete Cameras**).
- b. The Delete Cameras window will pop up.
- c. Select the devices you want to delete from the list, then click Delete.
- d. A dialog box will pop up. Click **Yes** to delete the device along with the recorded data; click **No** to delete the device but retain the recorded data; click **Cancel** to cancel the delete action.
- e. When completed, click **Close** to exit the **Delete Cameras** window and return to the main window. The deleted device will disappear from the station.





No

Yes

Cancel



## **Batch Insert Devices**

Batch insert is a very useful function that allows user to search, filter, and import a row of devices that are in the same LAN to a VAST station. The basic settings can also be applied to those inserted devices simultaneously, e.g., a common user name and password.

Please follow the steps below to batch insert devices to a station:

- a. Click Configuration > Camera Management > Batch Insert Cameras on the menu bar (or rightclick the station, then select Camera Management > Batch Insert Camera).
- b. The **Batch Insert Cameras** window will pop up. Then click **Search** to open the Search Camera window.
- c. On top of the Camera List window, you can select "List the cameras which are not inserted" or "List all cameras". The items listed below will then change accordingly. You may select ONVIF-compliant cameras as well using the Brand selector.
- d. Use the 4 Filters to narrow down the range of the wanted cameras from the list.
  - IP Range: Type in a range of IP address to narrow down the list; the filter automatically applies after you fill in a correct IP range.

Batch Insert Camer	15			
Instruction				
modiaction	Search button	Edit C	onnection Settings	
	Specify Address button ->		-	rt button
	Import From File button		rideo Settings	
				b
# Name	Address Port M	Iodel MAC	Status	Search
				Constitute Redebuses
				Specify Address
				Import From File
	🥙 Search Cameras	the set of the set of the	X	
	Brand: VIVOTEK 💌			
C				
	List the cameras which are not	inserted		
	🗇 List all cameras		Refresh	
	Б			
Camera Name:	Set following filters to na	rrow down the range of se	arched cameras.	
Connection Setting	Address Range:	~		
User Name:				
Configuration Prote	Address with prefix:			
_	Model with prefix:			
Streaming Protocc	MAC with prefix:			
Initial Viewing Stre				
	# Address	Port Brand	Model	Recording Storage
	□ 1 192.168.6.143 □ 2 192.168.6.101		00-02-D1-21-50-FB	Add the cameras to the recording storage:
	□ 2 192.168.6.101 □ 3 192.168.6.219		00-02-D1-81-73-03	DefaultGroup (3/256 CH)
				Insert
	Select All	ſ	OK Cancel	

■ IP with prefix: Type in the prefix of the IP address to narrow down the list.

<table-cell> Sear</table-cell>	ch C	ameras				
		cameras which are not ameras	inserted			<u>R</u> efresh
Filters	s	et following filters to n. Address Ra <u>ng</u> e:	arrow dow	n the ran	ge of searched cam	eras.
		Address with prefix:	192.168	1.5.132		
	C	Model with prefix:				
		MAC with prefix:				
	#	Address	Port	Model	MAC	
L 1	L	192.168.5.132	80	FD8161	00-02-D1-FC	-81-15

Model with prefix: The user can type in the prefix of the model name or the complete model name of the cameras to narrow down the list.

Search C	ameras					X
◯List the ⊙List all o	e cameras which are not cameras	inserted				<u>R</u> efresh
Filters						
9	Set following filters to na	arrow dow	n the ran	ge of sear	ched cameras	i. –
[	Address Ra <u>n</u> ge:			~		
[	Address with prefix:	192.168	.5.132			
	✓ Mo <u>d</u> el with prefix:	FD8161				
[	MAC with prefix:					
#	Address	Port	Model	M)	AC	
□ 1	192.168.5.132	80	FD8161	00	-02-D1-FD-81	-15

MAC with prefix: You can type in the prefix of the MAC address of the cameras to narrow down the list.

🧟 Search 🤇	Cameras									
◯List th ⊙List all	e cameras which are not cameras	inserted			<u>R</u> efresh					
-Filters										
Set following filters to narrow down the range of searched cameras.										
	Address Ra <u>ng</u> e:			~						
	Address with prefix:	192.168	.5.132							
	Mo <u>d</u> el with prefix:	FD8161								
	MAC with prefix:	00-02-D	1-FD							
#	Address	Port	Model	MAC						
□ 1	192.168.5.132	80	FD8161	00-02-D1-F(	0-81-15					

e. When the list is filtered, you can select the cameras one by one or check **Select All** to add them to the batch insert list. Then click **OK** to finish searching.

Filts		Set following filters to n		in the same			
		Address Ragge:	192.16		1	192.168.5	
4 4 4	* 1 2 3	Address 192, 168, 5, 131 192, 168, 5, 132 192, 168, 5, 119	Port 80 80 80	Modul FD8133 FD8161 IP8132		MAC 00-02-01-08- 00-02-01-90- 00-02-01-32-	81-15

f. The selected cameras will be shown on the batch insert camera list with the camera information and the connection status. When you click on a camera, a live view will show up on the right side for you to identify the cameras on the list. If you want to remove a camera from the list, click the trash can icon to delete it.

💙 Ba	tch Ins	ert Cameras							-	
In	structi	ion								
			Search button				Edit Conne	tion Setting:	5	
			Specify Address	button	-> Import	: into List ->	Edit Record	ing Settings	-> Ins	ert button
R			Import From File	button			Edit Video	Settings		
f	) —							_	b	· · · · · · · · · · · · · · · · · · ·
	#	Name	Address	Port	Model	MAC	St	itus	h	Search
i 💼	1	20x Zoom	192.168.6.143	80	SD83	00-02-D1-21	50-FB Ok			
	2	-	192.168.6.101	80	FE8173					Specify Address
	3	Mega-Pixe	192.168.6.219	80	IP8332	00-02-D1-19	1-2D-02 Ok			Import From File
g					111				4	
	era Nam	ne: Mega-Pixel	Network Camera							
Cor	nnectio	n Settings Rec	ording Settings							
Us	er Nam	ie:			Passw	ord:				
CC	onfigura	tion Protocol:	HTTP -		Config	juration Port:	80	×		
St	reaming	g Protocol:	TCP 🔻		Chann	iel:	1			- i -
In	itial Viev	wing Stream:	1							
		2								Recording Storage
										Add the cameras to the recording storage:
								Apply	to All	
								Apply		DefaultGroup (3/256 CH)
										DefaultGroup (3/256 CH)
									R	

- g. At the bottom of the window, there is a field for you to alter the camera settings including Connection Settings and Recording Settings. You can apply the new settings to each camera on the list, or click **Apply to All** to apply the same configurations to all the cameras. For more information about Connection Settings and Recording Settings, please refer to Insert Device on page 81 for detailed information.
- h. Specify host: If you want to add a camera to the list, click Specify Address to directly add a wanted camera. Click Add after filling in the correct information. The camera will be added to the list of the Batch Insert Camera window.
- i. By default, all inserted devices will be applied to the default recording group. Deselect the **Add** checkbox if you do not want to assign the selected devices to the default recording group.
- j. Click Insert when all the settings are done. Cameras will be added.

Specify Address	
<u>A</u> ddress:	192.168.5.131
Configuration Protocol:	НТТР
Configuratio <u>n</u> Port:	80
<u>U</u> ser Name:	
<u>P</u> assword:	
Add	

روي			

When you modify the camera settings, and when the connection information (User Name, Password, Configuration Protocol, Configuration Port, and Streaming Protocol) does not match the current network environment, the camera will be disconnected and the status of the camera will become "Camera cannot be found" as shown below.

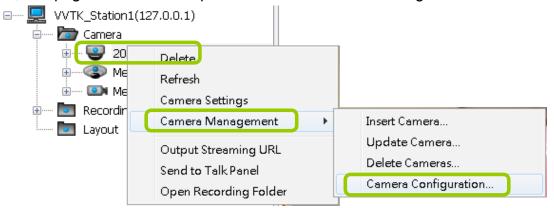
💙 В.	atch Ins	sert Cameras			- 19			00000	
In	struct	tion							
			Search button				Edit Connection	n Settings	
			Specify Address	button -	-> Import	t into List ->	Edit Recording !	Settings -> In	sert button
			Import From File	button			Edit Video Sett	ings	
	#	Name	Address	Port	Model	MAC	Status		Search
1			192.168.5.132	443		00-02-D1-FD-		nnot be found.	Specify Address
	2		192.168.5.131 192.168.5.119	443 443		00-02-D1-08- 00-02-D1-32-		nnot be found. nnot be found.	
1.08	3	Mega-Pixe	192,106,5,119	445	1P0152	00-02-01-32-	. Camera ca	ninot be iounu.	Import From File
Carr	nera Nar	me:							
Co	innectio	on Settings Rea	cording Settings						
U	ser Nan	ne:			Passw	vord:			
c	onfigura	ation Protocol:	HTTP -		Config	guration Port:	80		
s	treamin	ıg Protocol:	TCP 🔻		Chann	nel:	1		
Ir	nitial Vie	wing Stream:	1						
									Recording Storage
									Add the cameras to the recording storage:
								Apply to All	DefaultGroup (3/256 CH) 🔹
								]	Insert Close



You can enter a User name and Password and use the Apply to All button to apply this combination to all selected cameras. This way, you do not need to change the user name and password for every individual cameras.

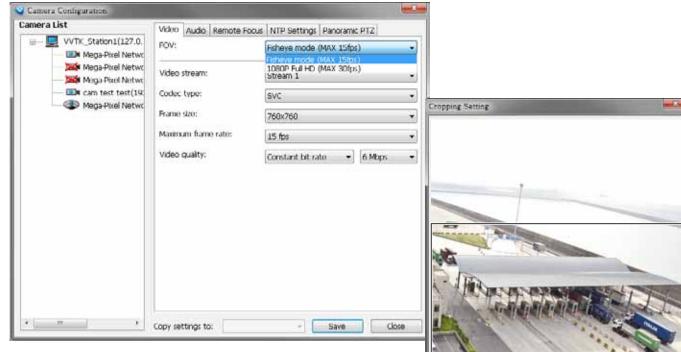
# **Camera Configuration**

The **Camera Configuration** function group provides immediate access to the video streaming and other settings without the need to open a web console. The function group is accessed by selecting a camera on the device tree, and right-click to select **Camera Management** > **Camera Configuration**. If you have new VIVOTEK cameras and the VAST server can not recognize their features, see page 69 for how to update camera information using the Device Pack update.



### FOV (Field of View)

The FOV configuration is available for 5 megapixel cameras (such as IP8372 and IP8172P), which allows you to crop a portion of the image captured by the sensor. The FOV setting applies in the scenario where you do not need all of the video a camera can capture. For example, when shooting a parking lot where the upper half of the image is the sky. Cropping a field of view can help save bandwidth and reduce the requirements for storage space.



### Video mode

For cameras having resource limitations such as having a lower frame rate when supporting dual streams, or lower frame rate when using the Rotation mode, its video mode is automatically displayed in the Video window.

Close

Save

#### Video

This tabbed window privides access to the selection of the live view stream, its compression codec, frame size, max. frame rate, and video quality. Note that the **Constant Bit Rate** methodology can be used to ensure that the size of video stream does not exceed a preferred threshold, regardless of the complexity or the changes of pixels in the image. You should use a maximum of 1080P as **frame size** and 6Mbps as **constant bit rate** for video streams managed by this system.

amera List	Video	Audio	Demote Family		ngs Panoramic	DT7	1		
📃 VVTK_Station 1(127.0.0.1)			Remote Focus	NIP Sette		PD		_	
Mega-Pixel Network	Video s	tream:			Stream 1				
Mega-Pixel Network	Codec	type:			SVC				
Mega-Pixel Network									
Mega-Pixel Network	Frame	size:			1056×1056				
Mega-Pixel Network	Maximu	um frame	rate:		15 fps			,	
	Video -								
	Video q	uality:			Constant bit rate	•	4 Mbps		

If your camera supports the **Smart Stream** function, the related options will be available with the Video quality. Note that only the **Auto mode** option will be available.

Auto: When set to Auto, only the moving objects and the areas around them will be displayed with the Foreground quality. The rest of the screen will be displayed with the Background (lower)

quality.

Camera Configuration			x
Camera List	Video Audio Remote Focus	NTP Settings Panoramic PTZ	
E 📃 VVTK_Station1(127.0. Mega-Pixel Netwo	Video stream:	Stream 1	•
Mega-Pixel Netwo	Codec type:	H.264	-
💷 Mega-Pixel Netwo	Frame size:	1920x1080	•
	Maximum frame rate:	30 fps	•
	Video quality:	Smart stream (auto r 💌	
	Fixed	tant bit rate d quality iood t stream (auto mode)	-
	UT RE	Background quality: Medium	-
		Maximum bit rate: 40Mbps	•
•	Copy settings to:		-
		Save	lose

## Audio

If audio feed is preferred, configure the audio codec type, sampling bit rate, and operating mode in here.

### Remote Focus

For cameras supporting the remote focus feature, such as the FD8362E that comes with a motorized lens, this window provides finetune buttons and full-range scan fucntion to help reach the best image focus.



#### NTP Settings

If cameras' real time clocks are set to be synchronized with a time server, enter the NTP server's address or domain name and specify an Updating interval. If you select the "Synchronize camera time with system automatically" checkbox during the initial setup, the NTP server IP will be the VAST server's IP.

amera List	Video Audio Remote Focus	NTP Settings Panoramic PT	z	Pg Setup Wi							
Image: Station 1 (127.0.)	Enable NTP Server			*viv	BTEK						Carnera
Mega-Pixel Netwo Mega-Pixel Netwo	NTP server: 192.160.6.125			Camera list					0		
- Con Mega-Poel Netwo	Updating interval:	One day					INAC	1		_	
			1	1	1111111111111	ront	Contraction of the	M G41 [11:03:00	C 1		
				2	160.254.233.154	80	PD8162	00-02-01-07-63-84	1.18	100	
				3	192.168.4.142	80	IP6330	00-A8-CD-A8-CD-6#	1	States -	
				4	192.168.4.1+4	80	F08362E	00-00-65-62-02-02			
				5	192,168.4,151	80	FD0131	00-02-01-19-00-13			
				6	192.008.4.145	80	PE8172	00-02-01-19-60-88	1.1		
				7	169.254.29.50	80	JP8362	00-02-01-17-13-32	31.11		
					169.254.19,53	80	1P8362	00-02-01-17-13-35	1.1		
				. 9	109-254 29.52	80	3P0362	00-02-01-17-13-34			
					IP addresses to el came ortre canera tine suth s	system autor	utcaly.	dt [Connon pass	mard		
() (A)	Copy settings to:							-	< Back	Next >	Cancel

Always remember to **Save** your configuration before leaving this window. You can also use the "**Copy settings to**" button below to duplicate your current settings to adjacent cameras.

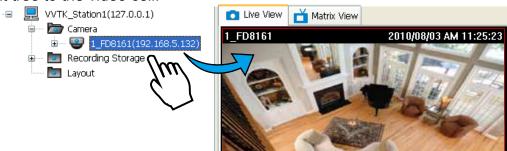
## Panoramic PTZ

Please refer to **Appendix A** Panoramic PTZ configuration on page 288 or the Panoramic PTZ Installation Guide for more information.

Camera Configuration								
Camera List	Video Audio Remote Focus NTP Settings Panoramic PTZ							
UVTK_Station1(127.0.	✓ Enable panoramic PTZ							
Mega-Pixel Netwo	Enable auto tracking							
< Þ	Copy settings to: Save Close							

# **View Live Videos**

The server will automatically add a newly-inserted device to the video cell for live viewing. You also can **double-click** the target device or **drag-and-drop** the target device from the hierarchical management tree to the video cell.



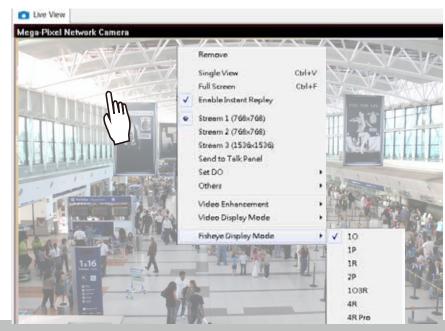
## Dual / Multiple Streams

For dual-stream devices, you can **right-click** on the focused cell to select stream 1 or stream 2. For multiple-stream devices, you can select from stream  $1 \sim \text{stream 4}$ .



## **Fisheye Display Modes**

By default, a circular view is displayed when a fisheye camera is successfully connected. To display Regional, Panoramic, or the combination of different views, **right-click** on a fisheye camera's live view to display the associated commands. 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.



Video Enhancement

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

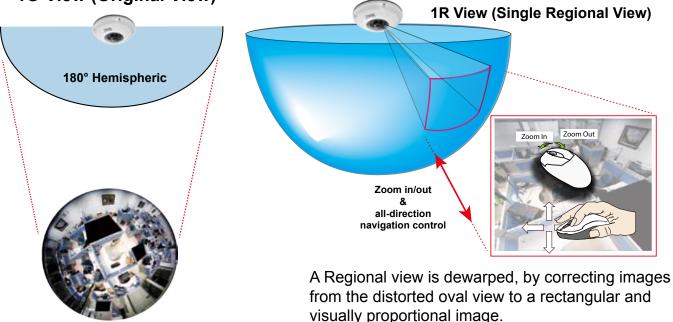
**10** (Single Original) Display mode:

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.



**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.



1P (Panoramic) Mode Screen Control

2P (2 Panoramic) Display mode:

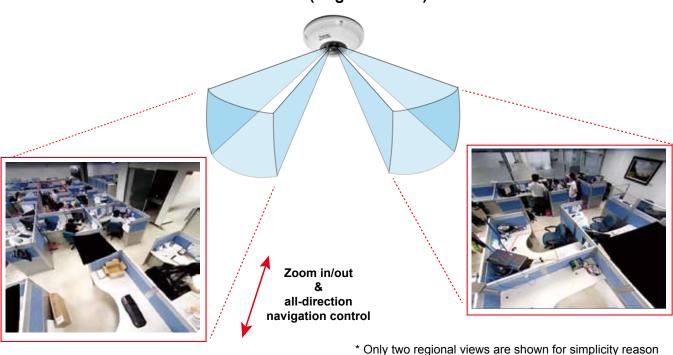
Two dewarped rectangular views are placed one on top of another each showing 180 degree of panoramic view. The 2P view looks like the upper view shows the front of hemisphere, and the lower view the rear half of the hemisphere.

## 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.



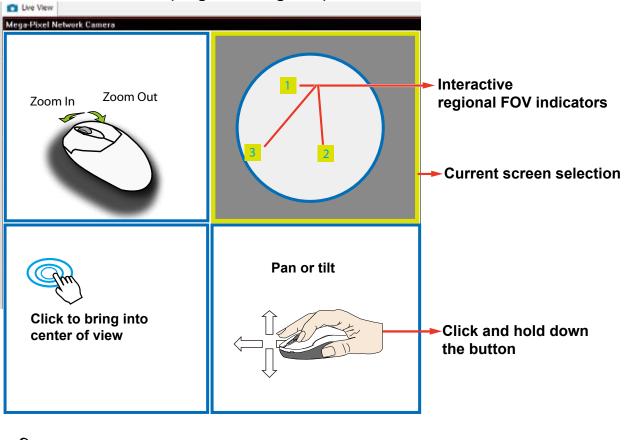
## **3R View (Regional View)**

#### 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.



## 103R (Original & Regional) Mode Screen Control

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.

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

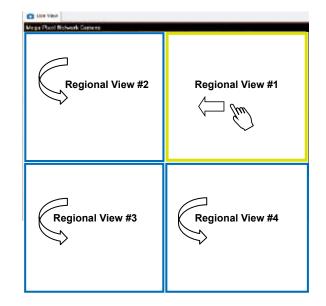
Regular: 10, 1P, 1R, 103R, 4R.

Wall mount: 1P2R, 1P3R.

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

4R (Quad Regional) Display mode:

C Link View Viego Flivel Network Contere	
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:

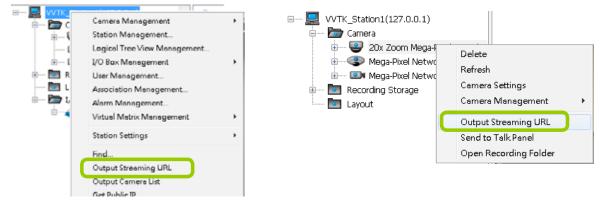
#### Refresh

Right-click the device, then click Refresh, the camera information will be refreshed from the server.

	0.1)	
B- C Mega-Pix	Delete	
B- Mega-Pix	Refresh	
e— Image: Recording Store	Camera Settings	
Layout	Comero Management	•
	Output Streaming URL	
	Send to Talk Panel	
	Open Recording Folder	

#### **Streaming Server**

**Right-click** the station or the device and click **Output Streaming URL**. A .txt file with streaming URL will pop up. Then you can use this URL to link to the live streaming through QuickTime Player.

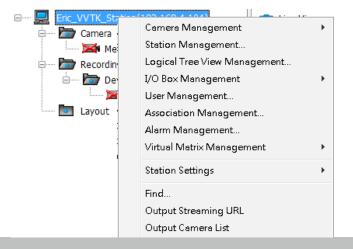


#### **Output Camera List**

This command produces a text file containing cameras' brand name, IP address, and HTTP port information. The camera list file can later be used for Batch Insert function, Import from File.

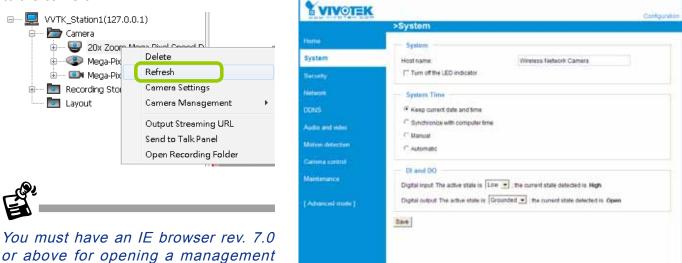
#### Get Public IP

If your access to Internet is via PPPoE, this function will display the public IP provided by your service provider. If your access to Internet is via a router, please consult your network administrator or consult your ISP for a valid public IP.



## **Camera Settings**

Left-click to select a camera, Right-click, and then click Camera Settings to open a brower's session to the camera.



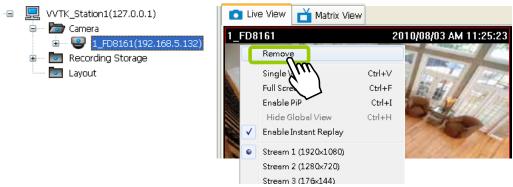
#### **Open Recording Folder**

session.

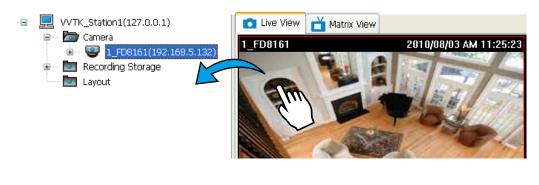
Click on this button, and the default recording folder will prompt. The specific folder for a specific camera will be opened.

# **Remove Live Video from the Video Monitoring Window**

There are two ways to remove a live video from the video cell: Method 1. **Right-click** the video cell and select **Remove**.



Method 2. Drag-and-drop the live view from the video cell to the hierarchical management tree window.







# How to Change the VAST LiveClient Layout

# Changing the Layout of the Live Video Monitoring Window

VIVOTEK VAST LiveClient supports up to 32-CH simultaneous video viewing on a single monitor and allows you to change the layout of the live video monitoring window based on the number of inserted devices.

## Switch Video Channels

To move a video channel to another empty video cell, drag-and-drop the view to the target video cell.



To switch two different channels, **drag-and-drop** one view to the other, then the two different channels will be switched to the opposite.



## **Configure Layout Mode**

Click the **Layout** button 🗐 on the quick access bar. Select a desired layout mode, and the layout window will be changed accordingly. Below we illustrate 15 types of layout modes and the corresponding page numbers:

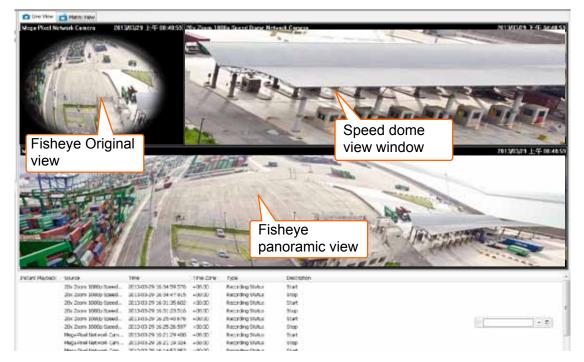
			🔕 🕃 🏨	₩2 🖽 🖾 🗲 🄶 🛱
	Layout mode	Description	No. of Video page	_
	1 x 1		32	1
	2V		16	
P-PTZ modes	1P+2		20	More than 1 video page;
F-FIZ modes —	3V		11	rotation function is enabled
	2 x 2		8	
	4V		8	
	2V+3		7	
	1 + 5		4	
_	1P+6		8	
	3 x 3		3	
	1P+8		6	
	1 + 12		2	
	4 x 4		2	
	5 x 5		1	Only 1 video page; rotation function is disabled
	1 + 31		1	

#### Configure Layout Mode

Click the **Layout** button 🗐 on the quick access bar. Select a desired layout mode, and the layout window will be changed accordingly. Below we illustrate 11 types of layout modes and the corresponding page numbers:

The 1P+2, 1P+6, and 1P+8 layouts apply exclusively to the Panoramic PTZ configurations. Please refer to page 287, **Appendix A Panoramic PTZ Configuration**, for details.

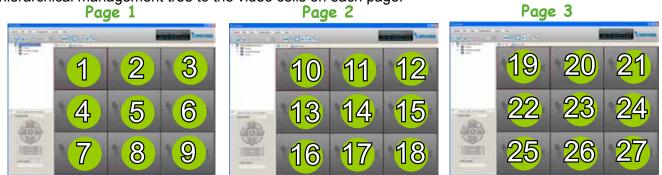
Normally, a Panoramic PTZ layout will consist of 1 fisheye Original view, 1 speed dome field of view, and 1 fisheye Panoramic view as shown below. Note that the interactive click-on-image control only takes place on the Original and the Panoramic views.



Some layout modes (1x1, 2V, 3V, 2x2, 4V, 2V+3, 1+5, 3x3, 1+12, 4x4) will spread all video channels into several pages. Some cameras support the video Rotation function for scenarios such as a tall, long corridor or the inside of a vehicle. The Rotation configuration is made through a web console with such cameras.

VIVOTEK	Home Client settings Configuration Language
	Media > Image
System	General settings Image settings Exposure Privacy mask
Media	- Video Settings
Image	Video title
Video	Show timestamp and video title in video and snapshots
Audio	Position of timestamp and video title on image: Top
Network	Timestamp and video title font-size: Small
Security	Color: OB/W @ Color
РТΖ	Power line frequency: O 50 Hz O 60 Hz Video orientation: I Flip Mirror
Event	Rotate 90 Degrees
Applications	Save
Recording	<u>944</u>
Local storage	

For example, under the 3x3 layout mode, you can switch among the pages by clicking shares and shares on the quick access bar. To arrange the content of each page, manually **drag-and-drop** cameras from the hierarchical management tree to the video cells on each page.



## **Rotating Video Pages**



For layout modes that contain more than one page, the LiveClient provides the rotating function for displaying all video pages in turn.

- To enable this function, click not the Quick Access Bar, which will become Stop Rotating, and the video pages will start to rotate so that the user does not have to click to move to the next page.
- To disable this function, click 🚯 **Stop Rotating**, which will become 🗃 on the Quick Access Bar.

You can also click Layout > Start to Rotate/Stop Rotating to enable/disable this function.



The default rotating time interval is 6 seconds. If you want to edit rotation settings, please refer to **Rotation Settings** on page 209.

## Edit Layout

Please follow the steps below to save a layout:

a. Arrange a layout mode and drag devices to their desired video cells.

b. Click Layout > Edit > Save to > New on the menu bar. A Layout Name dialog box will pop up.

Layout H	elp	🔮 Save Layout 🛛 🛛 🔀
Start Rotation	Ctrl+O	Layout Name:
<u>E</u> dit	▶ <u>S</u> ave To ▶ <u>N</u> ew	layout 1
<u>C</u> hoose	Delete	
		OK Cancel

c. Enter a name for the the layout, then click **OK** to enable the setting.

- d. Back to the monitoring window, the new layout will be displayed under the hierarchical management tree as shown below. You can save up to 10 layouts.
- e. To change to another layout, **double-click** the layout options on the hierarchical management tree, or click **Layout > Choose** on the menu bar to select a desired layout.



If you want to edit an existing layout, arrange a layout mode and drag devices to the desired video cells, then click Layout > Edit > Save to > New to save as a new layout or an existing layout to replace with the new one.

Layout	Help		
Start R <u>o</u> ta	tion Ctrl+O		
<u>E</u> dit	Þ	<u>S</u> ave To	▶ <u>N</u> ew
<u>C</u> hoose	•	Delete	Layout 2
Live	View 📩 N	Aatrix View	Layout 1

If you want to delete an existing layout, right-click the layout item on the hierarchical management tree or click Layout > Edit > Delete on the menu bar to delete it.





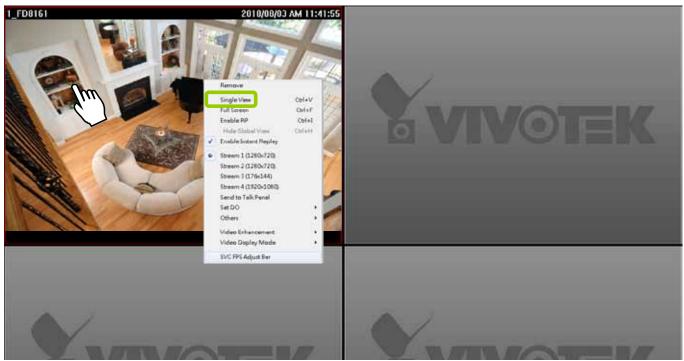
Whenever you close the LiveClient or Playback programs and changes in screen layout have been made, you will be prompted to save your current configuration.

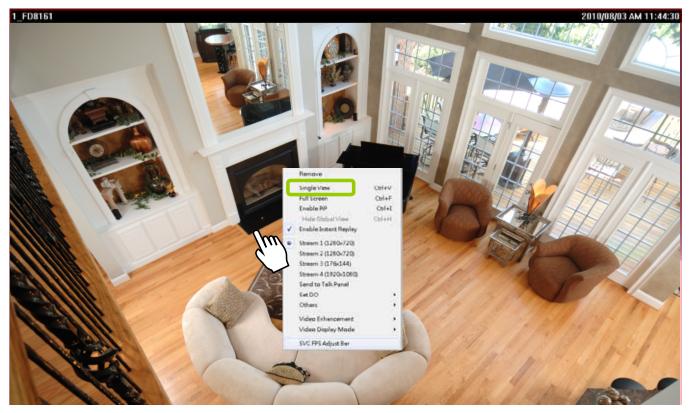


# Maximize/Minimize the Live Video Monitoring Window

Single View: to maxmize a video cell to the entire live video window

**Double-click** the video cell, or **right-click** the video cell and select **Single View**. The focused video will occupy the entire playback window as shown below.





To restore to the original layout, **double-click** the video cell or **right-click** the video cell and uncheck **Single View.** 

Full Screen: Maximize the live video monitoring window to the entire screen

Click **Full Screen** on the quick access bar or **right-click** the video cell and select **Full Screen**. In addition, you can also click **View > Full Screen** on the menu bar to maximize the live video monitoring window.

To restore to the original layout, you can **right-click** a video cell and uncheck **Full Screen** or click the **Esc** button on the keyboard to exit full screen mode.

Vie	ew Configuration	Layout H
¥.	PTZ Panel	
4	Two Way Audio Panel	
	Instant Playback Panel	
1	Alerm Window	
ſ	Full Screen	CtrleF
L	Minimize	
1	Matrix View	

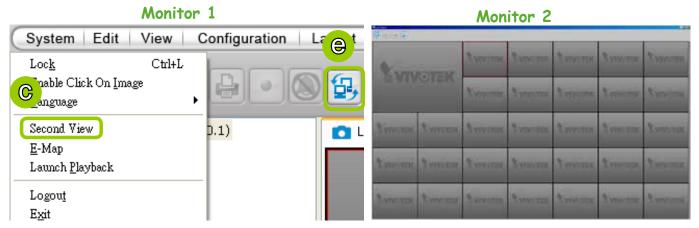
Minimize: If you click View > Minimize on the menu bar, LiveClient will minimize to the Windows tool bar.

## **View Live Video on Dual Monitors**

VAST also supports live video viewing on dual monitors, allowing you to manage a maximum of 64 channels concurrently on two screens. Moreover, the layout of the video monitoring window on different monitors can be set up individually.

Please follow the steps below to set up dual-screen mode:

- a. Set up dual monitors for your local computer.
- b. Launch VAST LiveClient on monitor 1.
- c. Click **System > Second View** on monitor 1, then the live video monitoring window will be displayed in monitor 2 as shown below.



- d. There are two ways to view live videos. One is to drag-and-drop the target device from the hierarchical management tree window to the video cells. The other is to click any video cell on monitor 1 or monitor 2, then double-click the target device; the live video will be displayed in monitor 1 or 2 in accordance with your selection.
- e. If you click **Switch Screen** by on the quick access bar, the live monitoring window on monitor 1 and monitor 2 will swap.

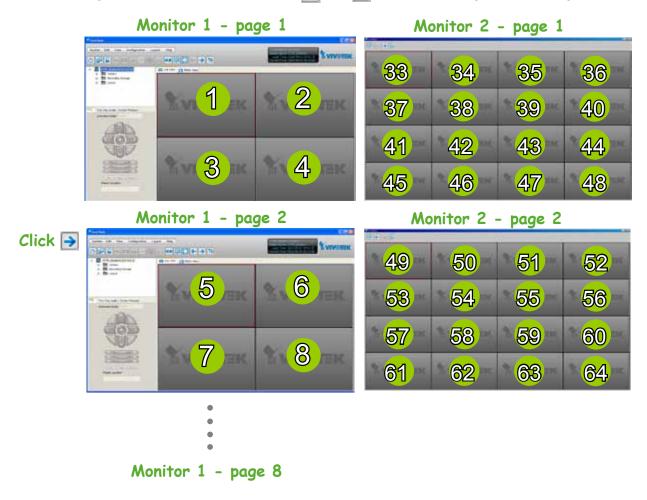
## Simultaneously Viewing up to 64 Channels

If you select 1+31 layout on dual screens, you can view a maximum of 64 channels live video simultaneously. In this case, each layout contains 32 channels on 1 video page.



Using different layouts on each monitor

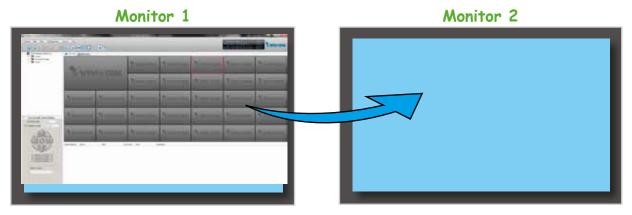
You can also select different layout for two monitors, simply click the **Layout** button B on the quick access bar. Below is an example of the 2x2 layout with 8 video pages on monitor 1 and the 4x4 layout with 2 video pages on monitor 2. You can click C and D to switch among the video pages.



## **View Live Video with Multiple Monitors**

If you have multiple screens in your monitoring center, you can switch the VAST LiveClient Window among these screens.

If you have two monitors, click Switch Screen 3 on the menu bar; the LiveClient window on monitor 1 will switch to monitor 2.



If you have three or more monitors, a drop-down list will be displayed when you click Switch Screen
 on the menu bar. The number of items on this list depends on the number of your screens. Select a desired screen on the drop-down list and the LiveClient Window will switch to the specified screen.



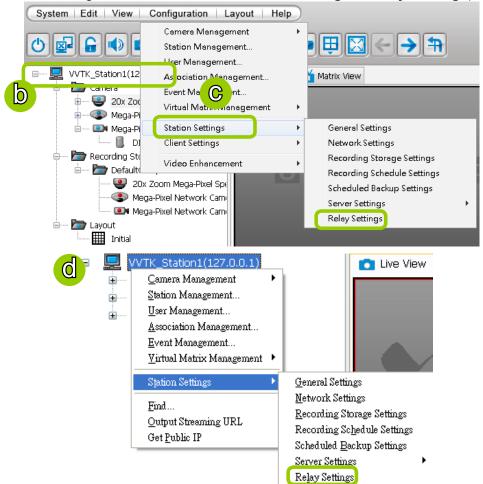
# How to Manage Stations

The VAST Server allows you to construct a hierarchical management system by adding more sub-stations to the root station. Under each sub-station, it can also insert sub-stations and network cameras.

# **Relay Settings**

Before adding a sub-station, please follow the instruction below to enable the sub-station's Relay Settings first.

- a. Login to the sub-station.
- b. Select the station from the hierarchical management tree.
- c. Click **Configuration > Station Settings > Relay Settings** on the menu bar (or **right-click** the station on the hierarchical management tree and select **Station Settings > Relay Settings**).



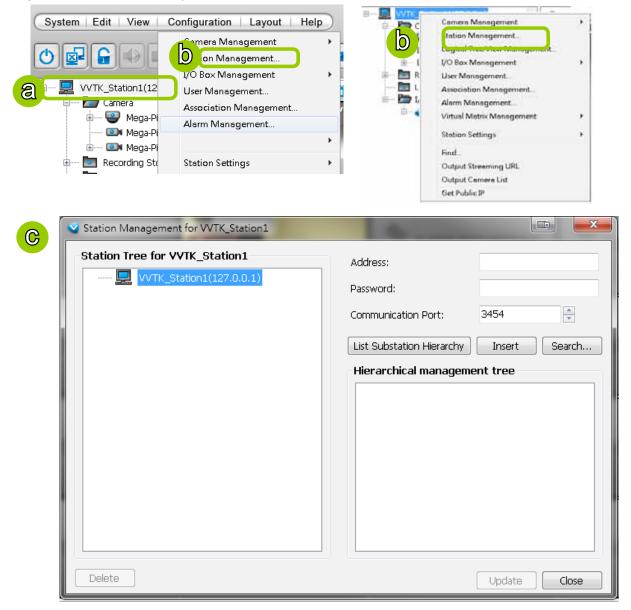
d. The **Relay Settings** window will pop up. Check **Allow Relay Connection** and enter a **Password**. Then click **OK** to enable the settings.

🕈 Relay Settings 🛛 🗙
☑ Allow relay connection
Relay Authentication
Password:
Confirm Password:
OK Cancel

## **Insert Sub-stations**

Please follow the steps below to add sub-stations:

- a. Select a target station from the hierarchical management tree.
- b. Click **Configuration > Station Management** on the menu bar (or **right-click** the target station, then select **Station Management**).
- c. The **Station Management** window will pop up. The hierarchical management tree managed by the target station will be displayed on the left panel.



- d. Before inserting the sub-station, you can click **List Sub-station Hierarchy** button to know if there is any sub-station under it.
- e. Enter the sub-station's **IP address** and **Password (defined in Relay Settings, not login password)**. The default communication port is 3454.
  - If the sub-station is on the LAN, you can click the Search Station button to detect all ST7501 and VAST on the LAN. A Station List window will pop up and show a list of detected cameras on the LAN. On the top of Camera List window, you can select "List the stations which are not inserted" or "List all stations". The items listed below will then change accordingly. You can click Name, IP Address, Model, Http port to sort the items. Then select a device from the list to insert to the station.

- f. When all settings are done, click **Insert** to add the sub-station to the target station. The sub-station will be displayed under the left station tree.
- g. To insert additional sub-stations to the target station, repeat the above steps.
- h. When completed, click **Close** to exit the Station Management window.

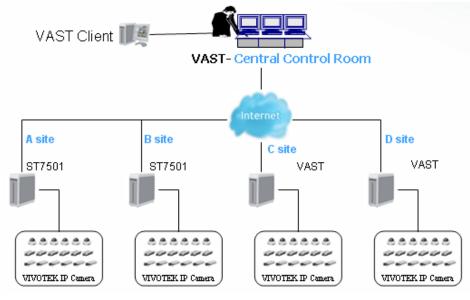
😎 Stati	ion Management for VVTK_St	ation1		×	
	ion Tree for VVTK_Station         Image: VVTK_Station1(172.16         Image: VVTK_Station2(1)	.7.82)	Address: Password:	172.16.4.23	
		d	Communication Port:		٩
			List Sub-Station Hier		
			🖳 VVTK_S	tation2(172.16.4.23)	
Del	ete				]
e	<ul> <li>Search Stations</li> <li>List the stations which are</li> <li>List all stations</li> </ul>	e not inserted		Refresh	
	Station List				
	Name	Address	Model	HTTP Port	
	VVTK_Station1	192.168.6.224	VAST	3454	
	RD1_NEIL_5235	192.168.6.207	VAST	12345	
	VVTK_Station1 VVTK_Station1	192.168.6.135 192.168.6.133	VAST VAST	3454 3454	

i. Back to the main window, you will find the newly-inserted stations displayed under the hierarchical management tree.

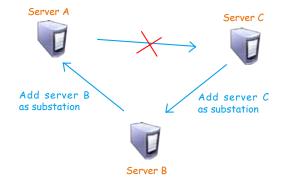




■ You can add VAST or free standard ST7501 as the sub-stations. The number of sub-stations can be added to the server depends on your key dongle. The VAST server will automatically detect the USB dongle installed on your host PC. Following is an illustration for two-level hierarchical architecture:



■ Please note that the following cyclic relay is not allowed.



## **Delete Sub-stations**

There are two ways to delete a sub-station:

Method 1. Select the sub-station on the hierarchical management tree, then **right-click** to delete.

📃 νντκ_	Station1(127.0.0.1)
🕀 🗖 🕀	lamera
😐 🔤 F	lecording Group
🔽 L	ayout
	/VTK_Station2(172.16.4.23)
	Camera Management
	Station Management
	<u>U</u> ser Management
	Association Management
	<u>E</u> vent Management
	<u>V</u> irtual Matrix Management 🔸
	Station Settings
	<u>F</u> ind
	Output Streaming URL
	Get Public IP
	Delete

Method 2. Delete the sub-station via the Station Management window:

- a. Click the station on the hierarchical management tree, then click **Configuration > Station Management** on the menu bar (or **right-click** the station, then select **Station Management**).
- b. The **Station Management** window will pop up. The hierarchical management tree managed by the station will be displayed in the left Station List window.
- c. Select a station from the list you want to delete. Its related information will automatically be displayed in the corresponding blanks in the Station Management window.
- d. Click Delete to delete it.
- e. To delete additional devices, repeat step c. and d.
- f. When completed, click **Close** to exit the camera management window and return to the main window. The deleted device will disappear from the hierarchical management tree.

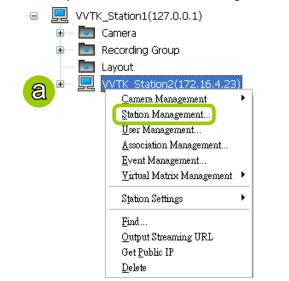
Station Management for VVTK_Station1		×
Station Tree for VVTK_Station1	Address:	172.16.4.23
Image: WTK_Station1(172.16.7.82)           Image: WTK_Station2(172.16.4.23)	Password:	
	Communication Port:	3454
	List Sub-Station Hierarchy	Insert Search
	Hierarchical manageme	ent tree
	······ 📃 VVTK_Station2	2(172.16.4.23)
Delete		
Delete		Update Close

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# **Update Stations**

Please follow the steps below to update a station via Station Management window:

- a. Right-click the target device on the hierarchical management tree and click Station Management.
- b. The **Station Management** window will pop up. The hierarchical management tree managed by the station will be displayed in the Station List window on the left.
- c. Select a station from the list you want to delete. Its related information will automatically be displayed in the corresponding blanks in the Station Management window.
- d. When all settings are completed, click **Update** to enable the settings.



Station Management for VVIK_Station1		×
Station Tree for VVTK_Station1	Address:	172.16.4.23
VVTK_Station1(172.16.7.82)           C         VVTK_Station2(172.16.4.23)	Password:	
	Communication Port:	3454
	List Sub-Station Hierarchy	Insert Search
	Hierarchical manageme	nt tree
	········ 🖳 VVTK_Station2	(172.16.4.23)
		Update Close

# How to Manage User Accounts

VAST allows users to apply multiple user accounts to a station with five levels of user roles: Administrator > Power User > User > Operator > Guest. Each role has different permissions listed as shown below. Moreover, Administrators have the highest privileges, while Power Users can only add/edit users as Power Users, Users, Operators, and Guests.

#### Functions \ User Roles Administrator Power User User Operator Guest Description Add sub-station under the Station Management V V existing station User Management V Manage user accounts V V Insert and configure the **Camera Management** V $\mathbf{V}$ camera settings Association Access and modify the V V $\mathbf{V}$ Management association settings Access Alarm Access Alarm management v v $\sqrt{}$ Management **Modify Alarm** Modify Alarm management $\mathbf{V}$ V V Management **General Station** Modify general station $\mathcal{V}$ v Settings settings **Station Network** v Modify network settings V Settings Access Recording Access the recording group Storage/ V V V V **Recording Schedule** and recording schedule Settinas Modify Recording Configure the recording Storage/ group and recording V V v **Recording Schedule** schedule Settings Enable the recording Manually Record V V V V function manually Scheduled Backup Configure backup schedule V $\sqrt{}$ v Settings Access Server Settings Access server settings V $\mathbf{V}$ v **Modify Server Settings** Modify server settings V V V Allow user to manage License Management V v station licenses Allow user to manage **Relay Management** V v station relaying settings Configure the client **Client Settings** settings: snapshot, AVI, V v v etc. Allow user to edit profile for Video Enhancement video enhancement and V V V Settings assign profile to camera in LiveClient

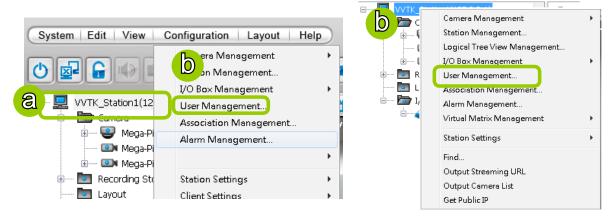
## The Default User Roles and Permissions of User Accounts

Privileges \ User Roles	Administrator	Power User	User	Operator	Guest	Description
Modify Directories	V	V	V			Add, remove and rename directories
Delete Station	V	V				Delete sub-station from a (parent) station
Delete Camera	V	V				Delete camera from the station
PTZ Control	V	V	V	V		PTZ control for PTZ cameras and speed domes in LiveClient
Device Control	V	V	V	V		Control the digital output or white light/IR illuminators of the cameras
Talk Control	V	V	V	V		Two way audio function for the cameras
Access Camera Configuration	V	V	V			Access the camera settings
Modify E-map	V	V	V	V		Allow user to modify the E-map
Event Search	V	V	V	V		Use built-in search engine to search specific events
Log Viewer	V	V	V	V		Use built-in search engine to search the log
Backup	V	V	V	V		Back up database manually
Record/Export Media	V	V	V	V		Record live stream or export playback stream to local files
Virtual Matrix Management	V	V				Allow user to manage virtual matrix
Virtual Matrix Control	V	V	V	V		Allow user to control virtual matrix
Playback Authority	V	V				Allow user to access Playback

## Manage a User Account

#### Add a New User Account - Basic Account

- a. Select the station from the hierarchical management tree.
- b. Click **Configuration > User Management** on the menu bar (or **right-click** the station, then select **User Management**).



- c. The **User Management** window will pop up. The user accounts under the station will be displayed under the left User List tree. Up to 1,021 users can be created (not including the default Admin and two internal communication accounts).
- d. Enter the User Name, Password, and specify the User Role of this user.
- e. Click Add to add the user account to the station. It will be displayed under the User List.

WTK_Station1	Account Management	
Administrator     admin     admin     admin     vivotek.tw\Eric.Lu     vivotek.tw\Frank.chang     ericthegreat123.com\er     ericthegreat123.com\ace     erichegreat123.com\ace     erichegreat123.com\ace     ericthegreat12	Authentication:Basic AccountUser Name:guard postPassword:••••Confirm Password:••••User Role:Power User	
< III >	Permission       Accessible Cameras       Accessible         Functions       Description         Image: Station Managem       Add substation         Image: Station Managem       Add substation         Image: Station Managem       Add substation         Image: Station Managem       Insert and control         Image: Station Managem       Insert and control         Image: Station Mana       Access and mage         Image: Station Mana       Access event         Image: Station Network       Modify generation         Image: Station Network       Modify network         Image: Station Network       Access the rest of Manage         Image: Image: Station Network       Configure the mage: Station Network         Image: Image: Image: Station Network       Station Network         Image: Image: Image: Image: Image: Station Network       Modify Recording         Image: Imag	n ur accc nfigu odif mar mar al sta rk se corc rec

User List	-Account Manager	ment
VVTK_Station1  Administrator  Admin vivotek.tw\Eric.Lu vivotek.tw\Frank.chang ericthegreat123.com\erik ericthegreat123.com\use	Authentication: User Name: Password: Confirm Password:	Basic Account
ericthegreat123.com\Ad ericthegreat123.com\use	User Role:	Power User

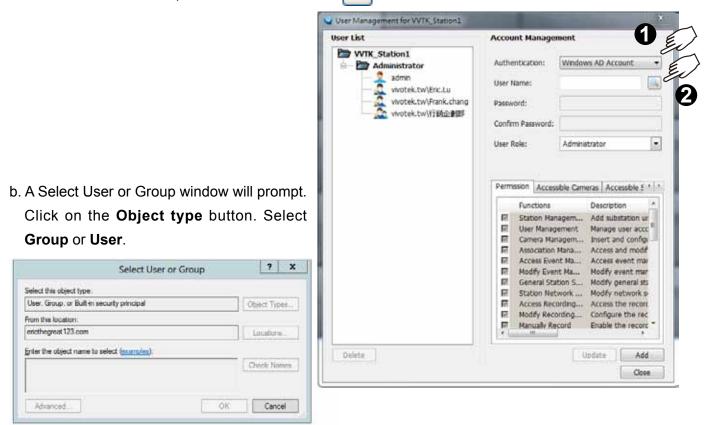
#### Add a New User Account - Windows AD Account

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 VAST server configuration.

Note the following with Windows AD support:

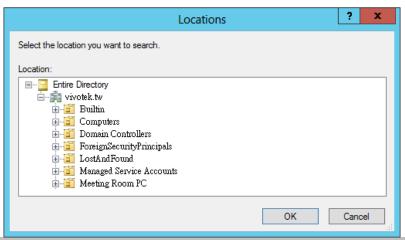
- 1. The ST7501 software does not support Windows AD accounts. However, if you log in to a VAST server which supports Windows AD accounts, the AD account will work for an ST7501 sub-station managed by VAST.
- 2. If you install VAST server on a Windows XP machine with Postqre SQL server, the login using a Windows AD account will not work.
- 3. The VAST server must reside in a domain managed by the AD server.
- 4. This function does not support the environment that spans across multiple AD domains.
- 5. A user account hosted by an AD server cannot be modified in VAST.
- 6. A User Group and its members configured in AD cannot be managed in VAST.
- 7. You cannot add an account having the same name as one you used to log in VAST.
- 8. There are 3 types of account for VAST: VIVOTEK account, AD single user, AD group.

a. To configure a Windows AD user as a VAST user, enter the **User Management** window. Select **Windows AD Account**, and click on the **Search** button.



0	bject Types	? ×
Select the types of objects you want to find Object types:		
<ul> <li>✓ ₱% Guit in security principals</li> <li>✓ ₱% Groups</li> <li>✓ ₱% Users</li> </ul>		
	01	Cancel

c. You can also click on the **Location** button to specify a search range on a location on the AD hierarchical tree, e.g., a department in an organization.



d. Enter a name for user or group that is known to the AD. Click on the **Check Name** button. The search results will be listed.

		Select User	or Group	? )	<b>K</b>
Sel	ect this object type:				
Us	er, Group, or Built-in s	ecurity principal		Object Types	
Fro	m this location:				
eri	cthegreat123.com			Locations	
Ent	er the object name to	select ( <u>examples</u> ):			
ad	min			Check Names	
	Advanced		OK	Cancel	
		Mu	ltiple Names Fo	und	X
obje		tches the following obj reenter the name, click		elect an	
	Name	Logon Name (pr	E-Mail Address	Description	In Folder
	S Administrator	Administrator Administrators		Built-in account f	encthegreat 123 encthegreat 123
					OK Cancel

- e. Click to select a user, and then click **OK** to confirm your selection.
- f. Users thus added will be listed on the left in the **User List**. These users or groups will be listed with their domain name listed in front of them and indicated by different icons
- g. Select a **User Role** for the AD user as Administrator, Power user, user, operator, or guest.
- h. Select user's privileges in terms of the **Permission**, **Accessible Cameras**, and **Accessible Substations** from the tabbed windows below.

i. Click the **Add** button to complete the process.

The next time you log in, you can select **Windows AD Account**, enter User Name and Password to access the VAST software.

Note that you should specify the domain name in front of the user name; "domain name\user name."

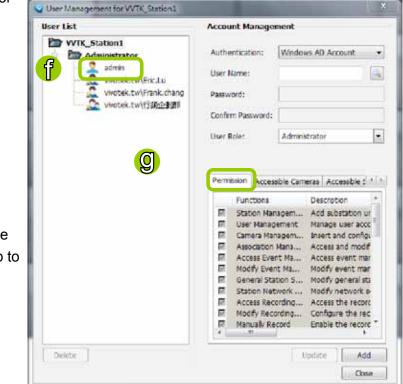
VAST LiveClient			
🗷 Log in local st	ation		
Address:	127.0.0.1		
Authentication:	Windows AD Account		
User Name:	vivotek.tw\Eric.Lu		
Password:	•••••		
Port:	3454		
Proxy Settings	]		
Log in	Cancel Hide <<		

#### Permission of the User Account

Administrator is granted with all access privileges, while other user roles' permission is limited. If you want to modify the permission, please login as the Administrator to configure the settings. f. Select a User account from the User List tree.

g. If you want to set the limit of the permission of the user, click **Permission** tab to check or uncheck the items.

h. If you want to limit the devices accessible by the user, click **Accessible Cameras** tab to select the desired devices.



	h
Permi	ssion Accessible Cameras Accessible Substations
⊖ All	cameras 💿 Selected cameras
	Cameras
	1_FD8161
$\mathbf{\nabla}$	2_IP8161

i. If you want to set the access limit of the sub-station accessible by the user, click **Accessible Substations** tab to select the desired devices.

- CP1			

If you want to remove access permission mentioned above from the account, the user will not able to operate some functions listed in the following warning dialog.

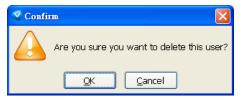
😴 Confi	m 🔀
	Unchecked sub-stations or cameras will have the following permission(s) removed from the account: "Camera Management", "Delete Camera", "Modify Recording Group/Recording Schedule Settings", "Scheduled Backup Settings", "Modify E-Map", "Modify Event Management"
	<u>OK</u> <u>Cancel</u>

j. When completed, click **Update** to enable the new settings.

	Permission Accessible Cameras Accessible Substations
	○ All substations ③ Selected substations
	Substations
	VVTK_Station2
k	Select all
	Update Add

#### Delete the User Account

k. Click Delete, a delete user dialog will pop up. Click OK to delete the user account.



#### If the Administrator modifies or deletes the User Account, that modified user might be kicked off from the station.

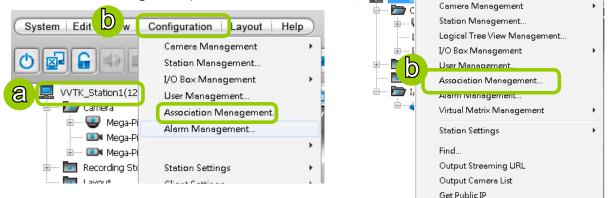
# How to Set up Association Management

VAST LiveClient supports association management which allows the user to configure relative event trigger notifications of connected network devices. (E.g., DI/DO status on the hierarchical management tree, motion detection windows appear in the video cell, the event list in the event window)

## **Association Management**

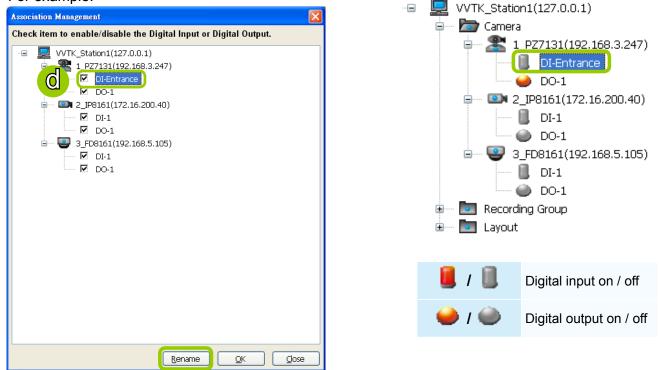
Please follow the steps below to configure assocation settings:

- a. Select the station from the hierarchical management tree.
- b. Click Configuration > Association Management on the menu bar (or right-click the station and select Association Management).



c. The **Association Management** window will pop up. Check or uncheck the items and click **Save** to enable the settings. The items you've selected will also be displayed under the hierarchical management tree.

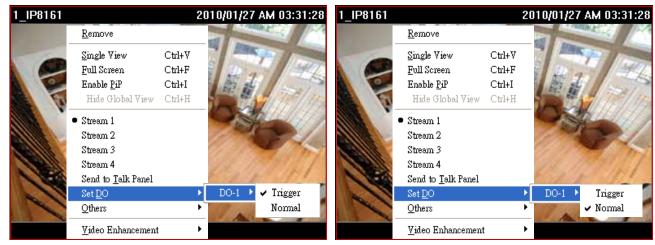
For example:



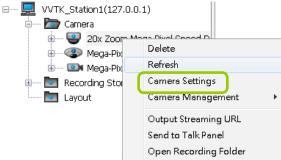
d. If you want to rename the DI device, select the DI item and click the **Rename** button. It will be very convenient for you to recognize the target DI device.



To manually enable DI/DO settings, please right-click the video cell and select Set DO to enable (Trigger) or disable (Normal) the digital output of the linked device.



Before you configure the DI/DO Settings for VAST, please enable DI/DO settings on your network device and set up the camera correctly on the configuration page. You can **right-click** the device and click **Camera Settings** to open the configuration page.



LiveClient Browser	
	Home Configuration Language
System	Applications > Di and DO
Security	Digital input: The active state is
Network	1: Low v ; the sument state detected is High
Media	2: Low ♥ : the sument state detected is rligh 0. Low ♥ : the sument state detected is rligh
PTE	Digital output. The active state is
Erent	1 Grounded 🔽 : the current state dictocted is: Open
Applications	2 Groundee 💟 : the current state detected is Open
Motion detection	-se2
DI and DO	
Audio detection	
Recording	
Local storage	

# How to Set up Alarm Management

VAST LiveClient supports Alarm management which allows the server to respond to particular situations (events).

## **Alarm Management**

Please follow the steps below to configure event management:

- a. Select the station from the hierarchical management tree.
- b. Click **Configuration > Event Management** on the menu bar (or **right-click** the station and select **Event Management**).



c. The **Alarm Management** window will prompt. Click **New** to set up a new event. Enter a name and description for the new alarm. When you finish the general settings, click **Next** to set up trigger source settings. The Alarm name you specify here will be displayed on the Alarm panel in the Live view.

Alarm Ma	inagement				X	🔮 New Alarm 📃
	would raise a	one or more interes in alarm.	ited events. When (	one of them is	i triggered,	General >> Trigger >> Action >> Schedule >> Detail
Enable	Name ADAM5 IP9155	집 것 않는 것 같은 것 같이 봐.	Actions Turn DO-3 (AD Start to record			
Now	Edt	Refrace	Detail >>	[	Close	Detect next event after 5 secs Back Next Finish Cancel

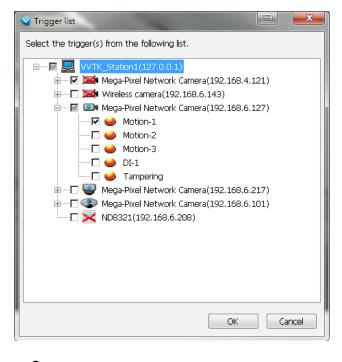
d. Click Add to select the trigger source by Device or Trigger Type.



Note that Motion detection windows are separately configured using web consoles with each individual cameras. Open a web console with the camera to configure Motion detection windows.

The Storage Status includes: Storage connection status and storage capacity status on NVR systems.

Each individual motion detection window can be used as a triggering condition. The Line Crossing and Field Detection packages running on cameras also apply as triggers.





E

If you connect your DI/DO devices via an I/O module (I/O box), please refer to page 296, **Appendix D Support for Digital I/O Modbus TCP Modules** for details.



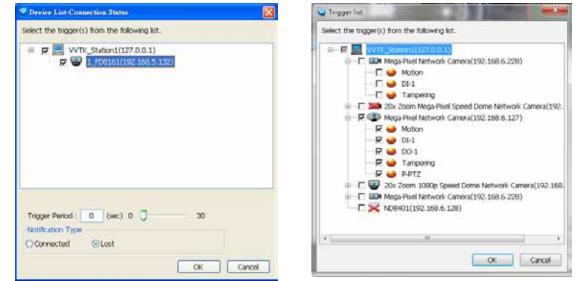
There is a new event trigger type, P-PTZ. The P-PTZ refers to the occurrence of Auto Tracking action in a Panoramic PTZ configuration.



Auto Tracking is configured on the fisheye camera in a Panoramic PTZ configuration.

If you manually configure a detection area for the Auto Tracking function, the P-PTZ event will not be triggered.

e. The Device List window will pop up. Select one or more devices and set the Notification Type. Depending on the trigger source, the Notification Type will be different. Then click **OK** to close the window.



- f. The trigger source(s) will be listed on the window as shown below. If you want to add more Trigger sources, click **Add** and repeat d.~e. Then click **Next** to assign action(s) to the trigger source(s).
- g. Click Add to open the Action Settings window.

Vew Alarm	💊 New Alarm
General >> Trigger >> Action >> Schedule >> Detail	General >> Trigger >> Action >> Schedule >> Detail
Connection Status (Lost) on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Status (Stop) on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Connection Status (Lost) on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Status (Lost) on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Status (Stop) on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera, Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera), Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera), Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera), Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera), Trigger Period : 5 ( Recording Error on Mega-Pixel Network Camera), Trigger Period : 5 ( Recording Error on Mega-Pix	Q Add Remove
Back Next Finish Cancel	Back Next Finish Cancel

#### There are several types of Action Settings.

- Email: The sever will send a notification via e-mail when a trigger is activated.
  - h. To enable this function, please set up the SMTP server first. Click **SMTP Setting** to open the window and refer to page 185 for detailed information.
  - i. Enter the related informtaion. You can modify the mail content in the blank. If you want to modify the content, click **Insert Macro** to select the parameter. When completed, click **OK** on the bottom to enable the setting.

Note that you can insert a snapshot taken by the time of alarm occurence of the recorded video. The snapshot will be sent along with the notification Email. The snapshot comes from camer's stream 1.

Action					
Email		h			
From :		SMTP Settings			
To :		Test			
Cc:					
Content:	At \$(EventTime), event type [\$(TriggerType)] occurred on \$(DeviceName)	Insert Macro			
Start to record on					
Mayo to project logistion					

- Start to record on: The sever will start to record video from selected camera(s) when an event is triggered.
  - j. Click **Add Camera** to select the target camera(s).
  - k. The selected camera(s) will be listed on the left window below. When completed, click **OK** on the bottom to enable the setting.



Move to preset location: The target camera(s) will move the shooting area to the preset location(s) when an event is triggered.

I. To enable this function, please set preset locations on the camera configuration page first.

- m. Click Add Location to select preset location(s).
- n. The selected preset location(s) will be listed on the left window below. When completed, click **OK** on the bottom to enable the setting.



- Set DO: Select this option to turn on external digital output device(s) when an event is triggered. For more information about how to set DI/DO settings on the target camera, please refer to page 137.
  - o. Click Add DO to select DO decive(s) and select a DO status (Normal or Trigger).
  - p. The selected DO device(s) will be listed on the left window below. When completed, click **OK** to enable the setting.

Set DO	1. (Mega Pixel No	twork Camera)	Add Do	
			, Remov	eal
GSM short	message		- 10	

VVTR_Station1(127.0.0. ADAM-6052(192.16 Minga Plant Nativersit Minga Plant Nativersit Minga Plant Nativersit Minga Plant Nativersit Minga Plant Nativersit	© Normal Camera(169 Camera(169
Mega+txel Network	*

- GSM Short Message: The sever will send a short message to a GSM cell phone when an event is triggered.
  - q. Please enter the Phone Number and open **GSM Settings** window to set related information if necessary. When completed, click **OK** to enable the setting.

Action					
🔘 Email					
Start to record on					
Move to preset location					
Set DO					
GSM short message					
Phone Number:	GSM Settings Test				
© HTTP					
Client Notification					
	CK Cancel				

6SM Settings	
SIM PIN Number:	1
COM Port Number:	COM1 +
Bits per second:	115200 -
Data bits:	0
Parity:	None
Stop bits:	1
Flow control:	None

Please enter the country code if you use overseas call.

- HTTP: This function allows user to send a CGI command to the linked network camera, such as pan/ tilt/zoom function or enable DO devices.
  - r. You can click **Insert Macro** to select the parameter. Please enter authentification information if necessary. For example: http://192.168.3.66/cgi-bin/admin/setparam.cgi?system\_hostname=\$(EventTime) \$(CameraName)

If you want to use special characters such as \$-\_.+!\*'(),#%+\$,@:;/?=&, please refer to the following table to transfer the Code (Hex).

For example: http://192.168.3.66/cgi-bin/admin/setparam.cgi?system\_hostname=123&456 --> http://192.168.3.66/cgi-bin/admin/setparam.cgi?system\_hostname=123%26456

HTTP	
URL:	Insert Macro
Use authentication: 📃	Test
User Name:	
Password:	

Character	Code (Hex)	Character	Code (Hex)
!	21	,	2C
#	23	-	2D
\$	24		2E
%	25	1	2F
&	26	:	3A
•	27	;	3B
(	28	=	3D
)	29	?	3F
*	2A	@	40
+	2B	_	5F
		~	7E

Client Notification: On the occurrence of an event, a pop-up window will display to show what is triggering the current event. Select the window size, and select the display duration of the notification window. If not selected, the notification window is manually closed.

V Action				
💿 Email				
💿 Start to record on				
Move to preset location				
💿 Set DO				
◯ GSM short message				
© HTTP				
Olient Notification				
Notify me with Popup Window. Size: Large 🔹				
Close it automatically after 5 🚖 seconds				
$\blacksquare$ Include the event-triggering camera				
Add Camera				
Remove				
OK Cancel				

Include the event triggering camera: You can select to display the screens of other cameras (e.g., adjacent cameras) when the notification prompts.

No form 150% Strend Forme National Conversion	-
20x Zoom 11880/ Spred Duris Weborn Camera	2013/00 11 11 11 11 11 11 11 11 11 11 11 11 1
	- Gentlemon-Surger
and the state of the second state	
	and the second
R STREAM NOT STREAM	
	A STREET
1000	1 C.C. 1. 8/2
the second s	
	5 - 10 C
	States and the second
	a section of the section
	4 1. 1883 . C.C.
	and store of the store
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	and the second sec
1 Charles and the second	
504362	
	and the second se

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s. The action(s) will be listed in the window as shown below.

Then click **Next** to set up schedule(s) to the action(s).

For more information about **Schedule Settings**, please refer to Recording Schedule Settings on page 161. You can assign more than one time frame to one action.

Vew Alarm
General       >>       Trigger       >>       Action       >>       Schedule       >>       Detail         General       >>       Trigger       >>       Action       >>       Schedule       >>       Detail
Turn DO-1 (ADAM-6052) to Trigger Turn DO-2 (ADAM-6052) to Trigger
Time Frame Rule
Always Weekly Setting (Day-based)
Add Remove Add Edit Delete Up Down
Back Next Finish Cancel Back Next Finish Cancel
Time Frame
Time Frame Name: 🛛 ways
Repeat Frequency: Weekly Setting (Day-based)
Weekly Setting (Day-based)
Set time segments in a 24-hour day. Multiple segments are allowed.
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Start Time: 00 🚔 00 🚔
End Time: 00 🗘 00 🐳 Add Delete
Repeat on: 🗹 Sunday 📝 Monday 📝 Tuesday 📝 Wednesday 📝 Thursday 📝 Friday 📝 Saturday
Range
Start: 2008/12/ 8   End:  2035/ 1/ 1
<ul> <li>Never Stop</li> </ul>
Repeat every 1 🛓 Week(s)

t. When you finish schedule settings, click **Next** to review the detailed information of the new event settings.

🔮 New Alarm
General >> Trigger >> Action >> Schedule >> Detail
Load Template Save as Template
Time Frame Rule
Always Weekly Setting (Day-based)
Add Edit Delete Up Down
Back Next Finish Cancel

u. Following is the detailed information of the new event setting. You can click **Back** to modify the event setting or click **Finish** to close the window.

New Alar	m 📃
General	>> Trigger >> Action >> Schedule >> Detai
Bescription Triggers:	
Schedule	
•	* Always

v. Following is an example of an enabled event. You can click **New** to set up more events or click **Close** to exit the window.

Alarm Li Enable	Name	Triggers	Actions	Schedule	
0	ADAM6		Turn DO-3 (AD	Always	
ō	IP8155	Motion-1 on Me	Start to record	Always	
Õ	alarm-2	Motion-1 on Me	Send client noti	Always	
0	Alarm3	Motion-1 on Me	Turn DO-1 (AD	Always	
Click to remove the event					

If your target station has sub-station(s), the **trigger sources** can be selected from the device(s) under the sub-station(s); while the **actions** can only be performed on the device(s) under the target station.

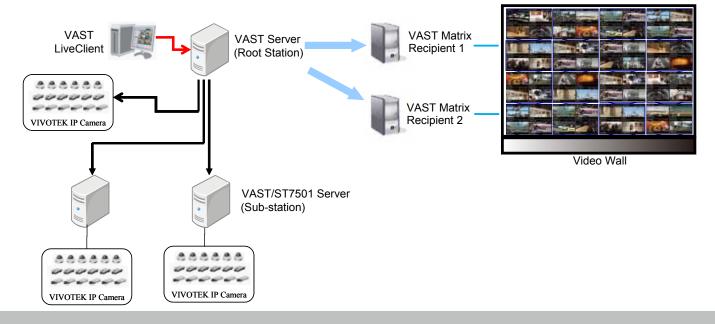
# How to Manage the Virtual Matrix

Virtual Matrix is a very useful tool for multiple monitor display and management. Based on the whole surveillance system architecture, it efficiently helps user construct a real-time live video wall in the control center. Under a large-scale hierarchical system, through VAST LiveClient you can only simultaneously monitor up to 64-CH on dual monitors; while Virtual Matrix offers fully extension for numerous channels and screens, thus making VAST a very powerful central management system. Moreover, you can change the layout to 2x2 or 3x3 on each monitor to enlarge the video size, then display the video pages on saperate monitor for close-up monitoring.



# The architecture of VAST Matrix

As the following picture shows, the surveillance system architecture is composed of VAST LiveClient, VAST Server with two sub-stations, and VAST Matrix separately on individual hosts. Before constructing the Virtual Matrix, please install and run VAST Matrix Program on Matrix Recipient connected with the video wall. Through the Virtual Matrix connection, you can use LiveClient to log in the root server to remotely manage and display all the live view onto the video wall by easily drag-and-drop. PTZ control is also available as on the LiveClient.



## Installing VAST Matrix Program

VASTMatrix\_setup

Please follow the steps below to install VAST Matrix Program:

- a. Run VASTMatrix\_setup.exe on another host (Matrix Recipient). Then click Next to start installation
  - wizard.



- b. Carefully read to accept the End-User License Agreement for use. Click I Agree to the next step.
- c. Choose the installing path as the destination folder, the required space and available space of the hard disk will be shown below for reference. Click **Next** to the next step.

🕎 VAST Matrix Setup 📃 🗆 🔯	🕎 VAST Matrix Setup 📃 🗆 🔀
License Agreement Please review the license terms before installing VAST Matrix.	Choose Install Location Choose the folder in which to install VAST Matrix.
Press Page Down to see the rest of the agreement.  End-User License Agreement  PLEASE READ CAREFULLY: This End-User License Agreement ("EULA") is a legal agreement between VIVOTEK Inc. ("VIVOTEK") as licensor, and you, as	Setup will install VAST Matrix in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
icense, for the VIVOTEK software that accompanies this EULA, which includes the video management software VAST Matrix VI and other applicable software (the "Software"). YOU AGREE TO BE BOUND BY THE TERMS OF THIS EULA BY INSTALLING, COPYING, OR OTHERWISE USING THE SOFTWARE OR CLICKING THE BIITTON MARKED "I AGREF" OR "YES"	Destination Folder C:\Program Files\VIVOTEK Inc\VAST Matrix Browse
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install VAST Matrix.	Space required: 21.7MB Space available: 69.4GB
VAST Matrix v1.0.0.4 < <u>Back I Agree</u> Cancel	VAST Matrix v1.0.0.4

d. Fill in the connection information with Port, Account & Password for VAST Server to connect to the Matrix Recipient.

<b>1</b>	onnection Information	on	
	Please enter your conne	ection information.	
Por <u>t</u> :	3455		
<u>A</u> ccount:	root		
Password:			
<u>C</u> onfirm Password:			
AST Matrix v1,0.0.4	1.01		
	<	Back Inst	

e. Click **Finish** to close the installation wizard, and you might want to run VAST Matrix immediately after installation by selecting the option **Run VAST Matrix**.



## Launching VAST Matrix

Please follow the steps below to install VAST Matrix Program:

a. Click the desktop icon to start VAST Matrix. When it's begun running, there will be a VAST Matrix tray icon on the toolbar for the user to configure easily.





VAST Matrix

b. The VAST Matrix live view window with multiple types of layout will be displayed. The following shows 32-channels layout.

YVVOTEK-		EVIVOTEK.	YVIVOTEK.	SALANDER.	YVIVOTEK.	-XVIVOTER
		Eviveriik.	<b>EVIVOTEK</b>	SVIVOTEK.	EVIVOTEK.	<b>XVIVOTEN</b>
XVIVGTEK.	XVIVOTEK.	<b>EVIVOTEK</b>	<b>XVIVOTEK</b>	<b>SVIVOTEK</b>	EVINGTER.	- XVIVGTER
XVIVOTEK.	XVIVOTEK.	<b>EVIVOTEK</b>	<b>XVIVOTEK</b>	SVIVOTEK.	EVIVOTEK.	SVIVETER
Xvivotek.	XVIVOTEK.	YVIVOTEK.	YVIVOTEK	<b>Synvotek</b>	YVIVOTEK.	YVIVOTEK

c. **Right-click** on the live view window, a function menu will pop up. You may also open the menu by right-click on the tray icon.

Configuration ⊻iew Settings	
<u>L</u> anguage	×
<u>D</u> isplay Client Information <u>A</u> bout Exit	

### Configuration

- Connection: Enter the account, password and port information for the VAST Recipient.
- Monitor: It shows the monitor(s) connected to your host. You can select the monitor(s) you wish to display as the video wall.

#### Others

<u>Auto launch at windows startup</u>: Select this option if you want VAST Matrix to launch when windows starts up in case to avoid the computer reboots by itself and accidentally shuts down VAST Matrix.

<u>Display key frame only</u>: Select this option to display live video with the key frame only in order to save the bandwidth. It also lowers down the CPU loading and memory usage.

Enable de-interlace: Select this option if your linked device does not support de-interlace function. For example: VS7100.

🕎 Configuration		🕎 Configuration	🕎 Configuration
Connection Monito Port: <u>A</u> ccount:	r Others 3455	Connection Monitor Others Use only the checked monitors:  Monitor 1	Connection Monitor Others Auto launch at windows startup Display key frame only Contended to the frame only Conten
Password: Confirm Password:	**************************************	OK Cancel	OK Cancel

### **View Settings**

Please refer to page 206 for detailed illustration.

### About

This dialog that shows the version of VAST Matrix and the simple statement of the version copyright.

🎼 About V	AST Matrix	
	VAST Mat	trix
All rights re	served. Copyright	© 2009-2014 VIVOTEK INC.
	http://www	.vivotek.com
	VIVOTE	K iViewer
	Please click QR co	de to purchase it.
	Product In	nformation
1		27 - DE
$\sim m$		
Ő		
	vailable on the	
	App Store	Soogle play
		ОК

Exit Click to close the VAST Matrix.

## **VAST Matrix Management**

Once the VAST Matrix Program is setup completely, the next step is to connect the VAST Server with VAST Matrix Recipient(s). Use LiveClient to log in VAST Server, then click **Configuration > Virtual Matrix Management** to configure Matrix Management and Matrix View Settings.

i	Configuration Lay	out	Help	)
	<u>C</u> amera Management <u>S</u> tation Management <u>U</u> ser Management	ŀ	152	₽⊠«
	<u>A</u> ssociation Management <u>E</u> vent Management		ive View	📩 Matrix View
	⊻irtual Matrix Managemen	t 🕨	<u>M</u> atrix M	fanagement
1	Station Settings Client Settings	*	Matrix V	'iew <u>S</u> ettings

### Matrix Management Settings

Please follow the steps to set up VAST Matrix Recipient(s):

- a. Click **Configuration > Virtual Matrix Management > Matrix Management** to open the Matrix Management window.
- b. Manually enter the Matrix Recipient Info as previous settings, or you click the search button search for the Matrix Recipient(s) on the LAN.
- c. When the information of the target recipient is filled in, you can use the detect button 🕙 to confirm if the filled information is correct.
- d. Click Add, then the recipient will be displayed on the Matrix Recipients list window.

💙 Matrix b	danagement 🕅	Search Matrix Recipier	ats		
- Matrix Recij Nam		O List the matrix recipien O List all matrix recipient Matrix Recipient List			Refresh
		MAC	Address	Model	HTTP Port
Matrix Recip		00-18-F3-E9-72-1F	192.168.4.139	VM7502	3455
<u>N</u> ame:	Recipient_1				
Addres <u>s</u> :	192.168.4.139				
<u>P</u> ort:	3455				
Accoun <u>t</u> :	root				
Pass <u>w</u> ord:	****				
Model:	VM7502 C				
	Edit display settings	e			
	Add Update Close				

e. Click <u>Edit display settings</u> to set up the viewing interface for the monitors (video wall) connected to the Matrix Recipient host.

🤜 Display Settings		
Rotation Interval Time:	10 🤤	seconds(3~999)
Enable <u>d</u> e-interlace	у	
(	OK	Cancel

 The Matrix View display is capable of executing rotation. The default interval time is set at 10 seconds.

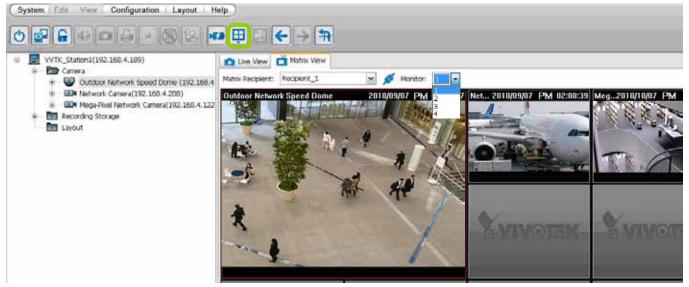
- f. If you want to set up more Martrix Recipients, repeat the above steps.
- g. If you want to modify the Recipient Info, select it from the list to change settings, then click **Update** to enable the new settings.
- h. When all settings are done, click **Close** to exit the Matrix Management page.

### Manage VAST Matrix through VAST LiveClient

Once the setup is complete in Virtual Matrix Management, you may go back to the main page of LiveClient, the connection between VAST Server and VAST Matrix will be working successfully. Then you can choose Matrix Recipient and the monitor from the drop-down list for the operation control. Some buttons on the quick access bar will be disabled when you switch from the Live View Panel to Matrix View Panel.

Change the layout

As the following picture shows, you can click 🖽 to change the layout and set new layout group on the Matrix View Panel as easy as control of the LiveClient. The layout on the monitor (video wall) will also change synchronizely once you change the layout on Matrix View Panel.



#### Connection status

If the VAST Server is not able to connect to the Matrix Recipient, the status icon  $\checkmark$  will become  $\checkmark$  and show the reason of disconnecting when you slide the mouse to the connection status icon. The "Connection Lost" string will be displayed on the Matrix View window as shown below.



Rotation

VAST Matrix is capable of executing rotation by clicking 1. You can even select another layout group on the Matrix View window without stopping the rotation. If you want to adjust the rotation interval time, please refer to <u>Edit display settings</u> on page 151 for adjusting.

PTZ

VAST Matrix currently does not support PTZ control.

- Matrix View Menu
   Right-click on the window to open the menu.
   Remove: Remove the channel from VAST Matrix.
   Stream 1
   Stream 1 ~ 4: Switch the camera stream between 1 ~ 4.
   Stream 2
   Stream 3

   Remove All Connections
  - It's capable of removing all connections from VAST Matrix once by clicking on 🚾 button.

### Matrix View Settings

Click **Configuration > Virtual Matrix Management > Matrix View Settings** to open the window.

Media Source

You can choose the path of media source from camera directly or the CMS server to display on Matrix View.

Display Settings

You can choose the display frame rate as full frame rate or key frame only.

Settings View Settings	
Media Source	
From camera	
From server	
From substation	
Display Settings	
Full frame rate	
💿 Key frame only	
ОК	Cancel

# Search VIVOCam Switches

Use the serach managed switch function to locate and open a web console with the managed switches. Double-click on the entry found to open a web console.

LiveClient		
System Edit View	Configuration     Layout     Help       Camera Management       Station Management       Logical Tree View Management       I/O Box Management       User Management       Association Management       Alarm Management	•
	Virtual Matrix Management	+
EB3338-	Search VivoCam Switches	
I/O Box	Station Settings Client Settings	) )
	Video Enhancement	•

			R	efresh
/ivoCam Switch List				
MAC	Address	Model	HTTP Port	
00-02-01-32-40-08	192.168.6.126	AW-GEV-264A-370	80	

# How to Configure the Station General Settings

Select the target station from the hierarchical management tree, then click **Configuration** > **Station Settings** > **General Settings** on the menu bar (or **right-click** the station on the hierarchical management tree and select **Station Settings** > **General Settings**). The **Station General Settings** window will pop up.

•		
System   Edit   Vie	ew Configuration	Layout Help
UVTK_Station	<u>Event Management</u> <u>V</u> irtual Matrix Manag	nent ive View 📩 Matrix View
E Layout	Station Settings Client Settings	General Settings     Network Settings
		Recording Storage Settings Recording Schedule Settings Scheduled Backup Settings Server Settings Relay Settings
	TK_Station1(127.0.0.1)         Camera Management         Station Management         User Management         Association Management         Event Management         Virtual Matrix Management	Live View
	Station Settings	Ceneral Settings
	<u>F</u> ind Qutput Streaming URL Get <u>P</u> ublic IP	<u>N</u> etwork Settings <u>R</u> ecording Storage Settings Recording Sc <u>h</u> edule Settings Scheduled <u>B</u> ackup Settings
ttings		Server Settings   Relay Settings

### **Server Settings**

In this section, you can modify the Station Name.

# **Log Settings**

In this section, you can set up **Log Settings** for the station.

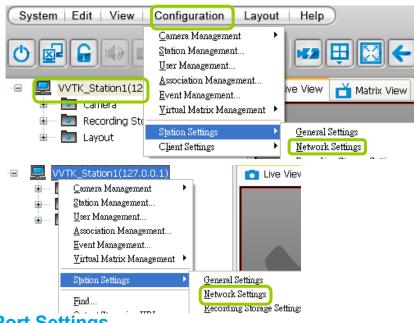
The VAST server allows user to search for the recorded log through VAST Playback. For more information, please refer to **How to Search Logs** on page 276.

- Log level: Select High (only record high-level logs), Normal (record high-level and normal-level logs), Low (record all logs). For detailed information about log levels, please refer to page 277.
- Reserve Time: Enter the time interval that you want to reserve the log record. The maximum value is 365 days.

Station General Setting	×
Server Setting	
Station Name: WVTK_Station1	
Log Settings	
Log Level: Normal 💙	
Reserve Time: 60 🗘 day(s)	
<u>OK</u> <u>Cancel</u>	

# How to Configure Station Network Settings

Select the target station from the hierarchical management tree, then click **Configuration** > **Station Settings** > **Network Settings** on the menu bar (or **right-click** the station on the hierarchical management tree and select **Station Settings** > **Network Settings**). The **Network Settings** window will pop up.



# **Port Settings**

- Server port: The default server port is set to 3454. If you change the server port, please enter the new value while logging the LiveClient next time.
- RTSP port: The RTSP (Real-Time Streaming Protocol) controls the delivery of streaming media. By default, the port number is set to 4543.

# **UPnP Settings**

- Enable UPnP port forwarding: For client to access the VAST Server from the Internet, select this option to allow the server to open ports on the router automatically so the video streams can be sent out from a LAN. To utilize of this feature, make sure that your router supports UPnP<sup>TM</sup> and it is activated.
- Enable UPnP presentation: If you select this option, shortcuts to VAST Server will be listed in My Network Places.

### **Proxy Settings**

In this section, you can enable, modify, or cancel **Proxy Settings** for VAST Server if your network devices are set up under a proxy.

# Web Access Settings

User can access VAST LiveClient and Playback via Internet web browser

(http://IP address:3454). For local host --> http://127.0.0.1:3454. See page 132 for Windows AD account information.



🅙 Network Sett	ings	
Port Settings -		
Server port:	ja 🗘	
RTSP port:	554	Apply
UPnP Settings		
Enable UPr	nP port forwarding	
Enable UPr	nP presentation	Apply
-Proxy Settings		
Enable Pro	ху	
IP Address:		
Port:	80 🗘	
User Name:		
Password:		
		Apply
-Web Access Se	ettings	
Enable Web	) Access	Apply

# How to Edit Recording Groups

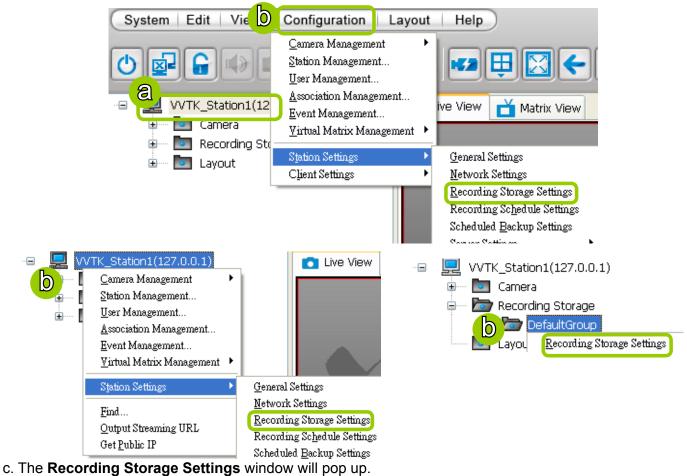
By default, all devices are assigned to the default recording group. You can manually remove a device from the default recording group. However, only those devices which belong to a recording group can produce recorded media files.

Another purpose of setting recording group is that you can divide all the managed devices into several recording groups, and for each recording group, you can assign several hard-disks (with recording paths) to store media data. The live media data will be stored in the first assigned hard-disk initially, and when the available space of the first hard disk reaches the preset reserved space limit, the media data will be stored in the second disk and so on. If the available space of the last disk reaches the reserved space limit, the recorded files in the first disk will be overwritten with the new media data. This procedure is called "Cyclic Recording".

# **Recording Storage Settings**

Please follow the steps below to set up recording groups for a station:

- a. Select the target station from the hierarchical management tree.
- b. Click Configuration > Station Settings > Recording Storage Settings on the menu bar (or rightclick the station on the hierarchical management tree and select Station Settings > Recording Storage Settings). You can also right-click DefaultGroup under the station and click Recording Storage Settings since all devices are assigned to the Default Recording Group by default settings.



### **Default Storage Group Settings**

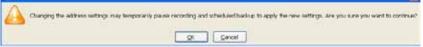
The following example shows the default storage group settings. You can click **Rename** to modify the group name or click **Delete** to remove the default settings.

	Recording Storage for VVIK_Station1			
	Storage <u>G</u> roup: DefaultGroup 💌 💽 💉			
	Paths in Storage Group			
d	C:\Recording	Storage I	nformat	tion
		Total:	58.59	GBytes
		Reserved:	2.00	GBytes
		Free:	12.59	GBytes

- d. The default recording path is **D:\Recording**. The total space and free space of the disk is shown on the right for reference.
- e. Add Local Path: Click and to add another recording path on your local computer. A Select Path dialog will pop up as shown below. When all settings are complete, click **OK** to enable the settings, or click **Cancel** to discard the settings. The default reserved space is 10% of the disk volume.
- f. Add Network Path: Click and a networked storage for recorded data. Please refer to page 184 for detailed information about how to add a new network storage server. Then double-click the **Path** to assign a specific folder as a new recording path.

	TE VETECT METWORK PROTAGE PETAGE	
Select Local Path	arage Server List:	
Improve       Improve         Improve       Improve	Address Domain Account 192.168.5.122 192.168.5.122 ritali	
folder D:\	ОК	Close
Add Delete Rename	Select Network Path	
Path: E:\ Type: Storage Path Recovery Path Storage Information Total: 488.29 GBytes Free: 131.66 GBytes Reserved: 48 GBytes OK Cancel	► \\192.168.5.122 ● \\AS	
Note that the reserved space is the comparatively small amount of storage space saved for data transaction during recording cycles. The reserved space is not the storage space configured for video recording.	Path: \\192.168.5.122\NAS Space Total: 90.45 GBytes Free: 7.81 GE Reserved: 2  GBytes OK	Bytes

- g. To modify the settings of a path, select the path from the list, then click **Change settings** to modify.
- h. To delete a path, select the path from the list and click **S Delete path**. A warning dialog box will pop up as shown below.



- i. By default, all devices are assigned to the **Default Recording Group** in the window on the right. You can select device(s) from the list and click << to delete device(s) (or **right-click** the device under DefaultGroup tree to delete it). Note that a **Delete Camera** dialog box will pop up. Click **Yes** to delete the device along with the recorded data; click **No** to delete the device but retain the recorded data; click **Cancel** to cancel the delete action. Please note that only those designated devices can record videos.
- j. Click >> to add devices to the **DefaultGroup**.

<u>v</u> ailable Cameras:				A <u>d</u> ded Cameras (1/258	ð):
Name	Address	Group		1_FD8161	
			-> []_]		
🖕 🗁 Record	ing Group	S Cont		Restore Apply	<u>C</u> lose

- k. Delete recorded data older than the duration: If you only want to retain recorded data for a duration, check this item and enter a number of day(s). In addition, since VAST Server will do "cyclic recording" automatically, the oldest file will be overwritten by the latest one when the maximum capacity is reached.
- I. When completed, click **Apply** to confirm and save your settings. If you want to cancel all of your editing, click **Restore** to return to the previous settings or click **close** to discard the settings.

### Add New Recording Group(s)

If you want to add a new recording group, click 🛃 Add to give a name to the new recording group, which will be displayed on the drop-down list.

The following is an example of recording group list.

<b>Recording Storage</b>	for VVIK_Station1							
Paths in Storage GRec	ording Group 1		Add Group Group Name:	Recor	rding Grou, <u>S</u> ave	o 1 Storage I Total: Reserved: Free:	<b>nforma</b> 58.59 2.00 12.10	tion GBytes GBytes GBytes GBytes
Delete recorded da Cameras in Storage Gr A <u>v</u> ailable Cameras: Name		Group			Added	Cameras (1/2	56):	
01_IP7138_6C 02_IP7151_84 03_IZ7151_33 04_IP7251_34 05_IP7142_D5 06_IP7130_A6 07_IP7330_20 08_IP7133_93 09_IP7131_B7 10_IP7135_12	192.168.3.36 192.168.3.37 192.168.3.38 192.168.3.39 192.168.3.39 192.168.3.81 192.168.3.81 192.168.3.83 192.168.3.83 192.168.3.85	Recording Gr Recording Gr Recording Gr Recording Gr Recording Gr Recording Gr Recording Gr Recording Gr Recording Gr	->		02_IP7: 03_IZ7: 04_IP7: 05_IP7:	151_84 151_33 251_34 142_D5 130_A6 330_20 133_93 131_87		

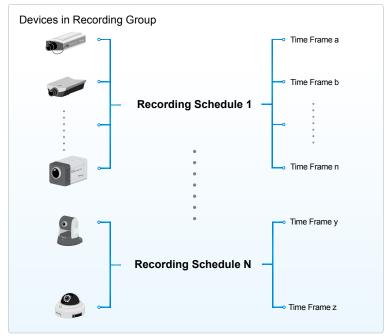
*Please refer to the following limits when you set up recording group(s):* 

- The maximum number of devices in a recording group is 64-CH. Please refer to the system requirements of the software.
- One recording group can be assigned with several recording paths and do cylic recording; while one recording path should only be assigned to one recording group.

# How to Edit Recording Schedules

After editing recording storage settings, you can begin to edit recording schedules for the devices in a recording group. By default, all devices are assigned to the default recording schedule (Please refer to the default time frame settings on page 165). Therefore, once you insert a device to the station, the VAST Server will begin to record live video according to the default recording schedule. You can also manually remove a device from the default recording schedule. Please note that you cannot assign recording schedules to those devices which have been deleted from a recording group.

The following is an illustration of a set of recording schedules, which are composed of several time frames. Each time frame has its own time segments, period of time, repeat interval, and recording mode. You can create different recording schedules with simple or complex time frames based on your needs.



In addition, you can arrange the priority of each time frame according to its importance. The recording schedule with the highest priority will be applied first. This capability is very useful because you can specify a new time frame with the highest priority temporarily without modifying the other time frames.

Features of the recording schedules:

- Each device can be assigned to only one recording schedule.
- Each recording schedule may contain many time frames.
- Each time frame has its own repeat frequency and recording mode.

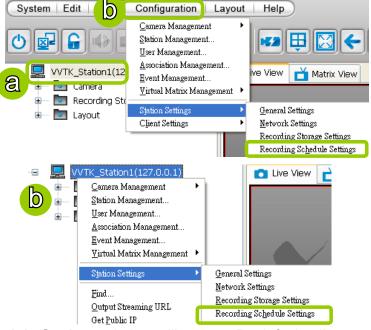
To save time editing recording schedules and time-frames, we also provide a useful **template** function to save your time on schedules/time-frames settings. That is, you can save a specified schedule and download it as a template for future use or upload a well-arranged schedule template designed by others.

Please note that after you save the recording settings in the server, the recording schedule will begin automatically according to your settings.

# **Edit Schedule List**

Please follow the steps below to set up the recording schedules:

- a. Select the target station from the hierarchical management tree.
- b. Click Configuration > Station Settings > Recording Schedule Settings on the menu bar (or rightclick the station and select Station Settings > Recording Schedule Settings).



c. The **Recording Schedule Settings** window will pop up. By default, all cameras under the station are assigned to **Default Schedule**, **Default Time Frame**, and **Default Camera List**.

### Add Schedules

d. To add a new recording schedule, click **Add** to enter a name in the Schedule Name dialog box for the new schedule. Click **OK** to confirm the settings or **Cancel** to discard the settings. The new recording schedule will be displayed on the schedule drop-down list.

#### **Rename Schedules**

e. To rename an existing schedule, select the schedule from the schedule drop-down list and click **Rename**. A Schedule Name dialog will pop up for you to fill in a name for the new schedule. Click **OK** to confirm the settings or **Cancel** to discard the settings. The new recording schedule will be displayed on the schedule drop-down list.

### **Delete Schedules**

f. To delete an existing schedule, select the schedule from the schedule drop-down list and click **Delete**. A Remove Schedule dialog box will pop up. Click **OK** to confirm or **Cancel** to discard the settings.



### Load/Save Schedule Templates

- g. If you have a schedule template with time frame settings, you can upload it to simplify the editing of the schedule. Click **Load Template**, and a **Load File** dialog box will pop up. Select the template file and click **Open** to load.
- h. If you want to save a schedule as a template for future use, select the schedule from the schedule drop-down list and click **Save as Template**. A **Save File** dialog box will pop up for you to save the template file.

🛯 Recording Schedu	ule Settings for VVTI	(_Station1			h		×
Schedule List: Defa	ult Schedule 💌	Add Renam	e Delete	Load Template	e Save as Templat	e	
Schedule List: Defa	Load file Look in: My Recent Documents Desktop My Documents My Computer	Add Renam		Load Template			
	My Network Places	File <u>n</u> ame: Files of <u>type</u> :	TimeTable tem	plate(*.tc)	•	<u>O</u> pen Cancel	
h	Save file					?	
	Save in:	🕒 My Document	8	•	] ← 🖻 💣 🖩		
	My Recent Documents Desktop My Documents My Computer	My Music				Save	
	Places	File name: Save as type:	TimeTable tem	plate(*.tc)	- -	Cancel	
							1

## **Edit Camera List**

Please follow the steps below to assign a device to a recording schedule:

- a. Select a recording schedule on the schedule drop-down list.
- b. By default, all devices under the station are assigned to the **Default Schedule**.
- c. Click << to remove devices from the **Default Schedule**. Click >> to add devices to the **Default Schedule**.
- d. Click **Apply** to confirm or **Close** to discard the settings.

					R	ecording Settings
Time Frame	Rule				- F	Recording Mode: Event 🗸
Always	Weekly Sett	ting (Day-based)				-
						Triggers       ☑ Motion     ☑ PIR       ☑ Tampering
						P-PTZ Line Crossing Field Detection
						Digital Input
						<ul> <li>Traditional Recording</li> </ul>
						Trigger State
					-	Recording from DI activated to DI normal
Add	Edit Delet	e	Up	Down		© Recording from DI normal to DI activated
amera List						
					Мела	-Pixel Network Camera
Name	Address	Group	Schedule		Wirele	ess camera
Mega-Pixel Ne Wireless camera		DefaultGroup DefaultGroup	Yes Yes		Mega- Mega-	-Pixel Network Camera -Pixel Network Camera
Mega-Pixel Ne		DefaultGroup	Yes	C		-Pixel Network Camera
Mega-Pixel Ne		DefaultGroup	Yes			
Mega-Pixel Ne	192.168.6.101	DefaultGroup	Yes	->		
					1	

If you add a Network Device that does not belong to any Recording Group, a warning dialog will pop up as shown below. For more information about how to set up Recording Group(s), please refer to Recording Group Settings on page 157.

-Camera Lis	t						
Name	Address	Group	Scheduled	]	1_PZ7131		
1_PZ7131	192.168.3.247	DefaultGroup	Yes				
2_IP8161	172.16.200.40		No				
			Serror				
			🚫 Th	e camera is not i	n recording group.		
				<u>O</u> K	]		
				-			
						Apply	⊆lose

# **Edit Time Frame List**

### Default Time Frame: Weekly (Day-based), Mon.~Sun., 24-hour, continuous recording

💙 Recording Sche	dule Settings for VVTK_Station1	-			×
Schedule List: De	fault Schedule 🗸 Add Rename	Delete Load Template	Save as Template		
Time Frame List	-	Record	ing Settings		
Time Frame	Rule	Recordir	ng Mode: Event	<b>_</b>	
Always	Weekly Setting (Day-based)		-		
		Trigge V Mot	tion 📝 PIR	<ul><li>Tampering</li><li>Field Detection</li></ul>	
		Digita	l Input		
		© Tra	ditional Recording		
			igger State 🗌 Norma	al State	
Add	Edit Delete Up	Down	ording from DI activate	ed to DI normal	

Click Edit to open the Default Time Frame settings page as shown below.

Time Frame	
Time Frame Name:	Always Load Template Save as Template Save
Repeat Frequency:	Weekly Setting (Day-based)
Weekly Setting (	(Day-based)
Set time segment	s in a 24-hour day. Multiple segments are allowed.
0 1 2 3	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Start Time: 00	÷ 00 ÷
End Time: 23	÷ 55 ÷ Add Delete
Repeat on: 🔲 Su	nday 🗌 Monday 🔲 Tuesday 📄 Wednesday 📄 Thursday 📄 Friday 📄 Saturday
Range	
Start: 2013/ 7/1	.0 - End: O 2013/ 7/10 -
	Never Stop
Repeat every 1	Week(s)

### Add New Time Frames

Please follow the steps below to add new time frames to a schedule:

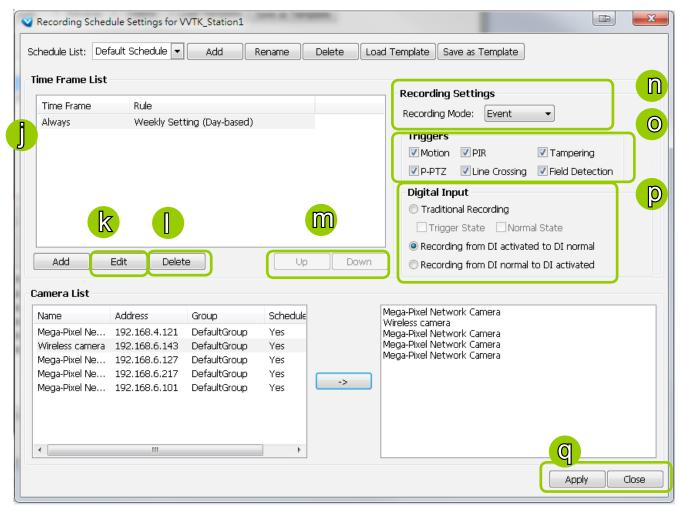
- a. Select a recording schedule from the drop-down list.
- b. Click Add to open the Time Frame Settings window.

	Recording Sched	ule Settings for VVTK_Station1	
a	Schedule List: Def	ault Schedule 👻 Add 🛛 Rename 🖉 Delete	Load Template Save as Template
	Time Frame List		
	Time Frame	Rule	Recording Settings
	Always	Weekly Setting (Day-based)	Recording Mode: Event
			Triggers
			Motion PIR Tampering
			♥ P-PTZ ♥ Line Crossing ♥ Field Detection
			Digital Input
	b		Traditional Recording
			Trigger State Normal State
	Add	Edit Delete Up Dov	© Recording from DI activated to DI normal

- c. Enter a name for the new time frame.
- d. If you have a time-frame template, you can upload it to simplify the editing of the schedule. Click **Load Template** and the **Load File** dialog box will pop up. Select the template file to load.
- e. To edit the new time frame, select a **Repeat Frequency** from the drop-down list and edit the time segments, applicable days, applicable period of time, and repeat time interval. For the detailed settings of each repeat frequency, please refer to **The Concept of Repeat Frequency** on page 169.
- f. When completed, click **Save** to enable the settings.
- g. If you want to save this time frame as a template for future use, click **Save as Template**. A **Save file** dialog will pop up for you to save the template.

	Time Frame C 9 1 🗵					
C	Time Frame Name Time Frame 2 Load Template Save as Template Save					
e	Repeat Frequency   Weekly Setting (Periods in a week) 💌					
	Weekly Setting (Periods in a week)					
	Set time segments in a week. Multiple segments are allowed.					
	Sun Mon <u>Tue Wed</u> Thu Fri Sat					
	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23					
	Start Time Tuesday 🕑 00 🗘					
	End Time Thursday 🗸 00 🗘 🚺 🗘 🚺 Add Delete					
	Range:					
	Start 2010/ 1/27 💌 End 🔿 2010/ 1/27 💌					
	<ul> <li>Never Stop</li> </ul>					
	Repeat every 1 🗘 Week(s)					

- h. If you want to add additional time frames to the schedule, repeat the steps above.
- i. Close the window when you finish the time frame settings.
- j. Back to the Recording Schedule Settings window, the new time frame will be displayed on the Time Frame List.
- k. If you want to edit an existing time frame, select if from the Time Frame List and click Edit to set up.
- I. If you want to delete an existing time frame, select if from the Time Frame List and click **Delete**.
- m. If you want to change the priority of a time frame, select it from the Time Frame List and click **Up** or **Down** to shift its position. The time frame on the top of the list has the highest priority.



### **Recording Settings**

- n. Select one of the following Recording Modes for the time frame:
  - **None**: No recording action.
  - Continuous: 24-hours continuous recording. If you want to enable Activity Adaptive Streaming, please refer to page 160 for detailed illutration.
  - Event: The server will start to record only when an event is triggered. The recording time length depends on the settings in Recording Storage Settings. The default time length is 20 seconds (10s pre-event time plus 10s post-event time). Please refer to page 159 for more information. For more information about event catagories, please refer to page 270 for detailed information.
- Select Trigger Source(s): Motion Detection, Line Crossing, Field Detection, PIR, Tampering Detection, and P-PTZ (Auto Tracking).
- p. Digital Input: See next page for more information.

The Digital Input signal triggers can be configured as follows:

- 1. Traditional Recording: can be triggered when the DI enters the Trigger State or the Normal State. If thus configured, the recording task will end when the post-event recording time is reached.
- 2. The recording starts when DI is triggered, and will end when the DI signal returns to Normal.
- 3. The recording starts when DI is Normal, and will end when the DI signal returns to Triggered.

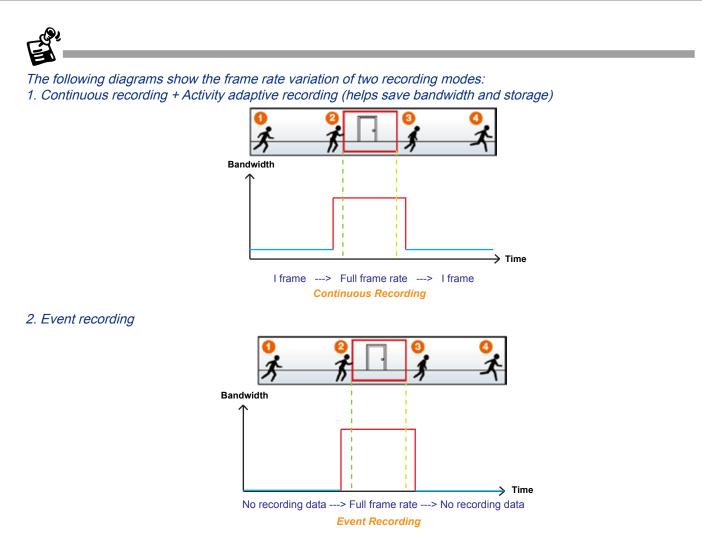
An example for the configuration can be: the recording starts when a door is opened (DI triggered), and the recording stops when the door is closed (DI returns to normal).



When connected, a camera's Digital input signal is automatically detected as pulled-high or pulled-low. Users should then designate the current state as Normal or Trigger. The configuration page is found in **Configuration > Application > Digital Input** on a web console.

Applications	> Digital input
Digital input	
Normal status:	e High C Low
Current status:	High
	Save

q. Click **Apply** to confirm the settings. Then close the window when you finish the recording schedule settings.



# The Concept of Repeat Frequency

VAST offers the following types of repeat frequency. The definition of each type is listed in the following table:

Repeat Frequency	Discription
Daily Setting	<ul> <li>Specify arbitrary time segments within a day,</li> <li>Repeat the segments every N days in the specified period of time.</li> </ul>
Weekly Setting (Day-based) (Default Time Frame)	<ul> <li>Specify arbitrary time segments within a day,</li> <li>Apply only on selected days of a week,</li> <li>Repeat the segments every N weeks during the specified period of time.</li> </ul>
Weekly Setting (Periods in a week)	<ul> <li>Specify arbitrary time segments within a week,</li> <li>Repeat the segments every N weeks during the specified period of time.</li> </ul>
Monthly Setting (Day-based)	<ul> <li>Specify arbitrary time segments within a day,</li> <li>Apply only on selected days of a month,</li> <li>Repeat the segments every N months during the specified period of time.</li> </ul>
Yearly Setting (Day-based)	<ul> <li>Specify arbitrary time segments within a day,</li> <li>Apply only on selected days of a year,</li> <li>Repeat the segments every N years during the specified period of time.</li> </ul>

### Repeat Frequency: Daily Setting

To set up daily repeat frequency, please configure the following items: Daily time segments, applicable period of time, and repeat time interval.

Time Frame	
Time Frame Name         Load Template         Save as Template         Save	
Repeat Frequency Daily Setting	
Daily Setting	
Set time segments in a 24-hour day. Multiple segments are allowed.	Daily time segments
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Daily timeline control bar	*You can drag the daily timeline bar for more
	than one time segment
End Time 00 \$ 00 \$	per day.
Range:	
Start 2010/ 1/27 💌 End 🔿 2010/ 1/27 💌	<ul> <li>Applicable period of</li> </ul>
<ul> <li>Never Stop</li> </ul>	time
Repeat every 1 🗘 Day(s)	Repeat time interval

#### Set up daily time segments

You can specify several time segments within a day. The numbers 0~23 on the **hourly timeline control bar** (the purple rectangles) represent the 24 hours in a day.

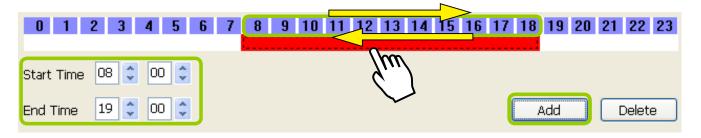
There are two ways to define time segments: one is to use the computer mouse to manipulate the timeline control bars; the other is to fill in the precise start and end time values in the corresponding fields.

#### Add time segments: Choose either step 1 or step 2 to set up

1. Use the mouse to drag the timeline bars:

- a. Left-click the daily timeline control bar (the purple rectangles) and drag the mouse.
- b. The corresponding time segment will also appear in the Start Time and End Time fields. Click **Add**, then the red timeline bars representing new time segments will appear as shown below. You can drag multiple time segments within a day.

In the following illustration, the yellow arrows show the dragging direction of the mouse. You can drag from left to right or the opposite.



### 2. Fill in the precise Start Time and End Time:

- a. Directly enter the value in the Start Time and End Time fields, then click Add.
- b. The corresponding red timeline bar will automatically appear as shown below.

0 1 2 3 4 5 6 7	8 9 10 11 12 13 14 15 16 17 18 10 20 21 22 23
Start Time 08 ♀ 00 ♀	
End Time 19 文 00 🗘	Add Delete

#### Delete time segments: Choose either step 1 or step 2 to set up

1. Use the mouse to erase the timeline bar: **Right-click** on an existing red timeline bar and drag the mouse. A green timeline bar representing the deleted part of the time segment will erase the red bar as shown below.

In the following illustration, the green arrows show the dragging direction of the mouse. You can drag it from left to right or the opposite.

0 1 2 3 4 5 6 7	8 9 10 11 12 13 14 15 1	6 17 18 19 20 21 22 23
Start Time 08 🗘 00 🗘	(m)	
End Time 19 🌻 00 🗘		Add Delete
0 1 2 3 4 5 6 7	8 9 10 11 12 13 14 15 1	6 17 18 19 20 21 22 23
Start Time 12 🗘 00 🗘		
End Time 14 🗘 00 🗘		Add Delete

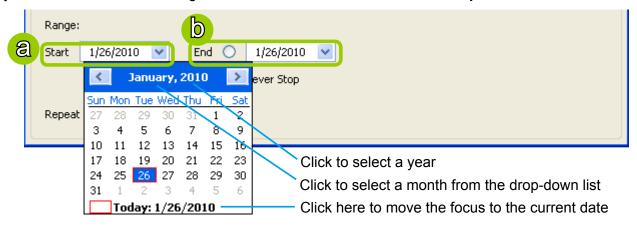
- 2. Use the delete button to remove the entire timeline bar:
  - a. Click an existing red timeline bar or **left-click** the **daily timeline control bar** (the purple rectangles) and drag the mouse.
  - b. The corresponding time segment will appear in the Start Time and End Time fields.
  - c. Click **Delete**, and the selected timeline bar will disappear.

0 1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16 17 18 a <sup>20</sup>	21 22 23
D Start Time 14 🗘 00 🗘		С
End Time 19 🗢 00 🗢	Add	Delete
0 1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16 17 18 19 20	21 22 23
Start Time 14 🗘 00 🗘		
End Time 19 🗘 00 🗘	Add	Delete

### Set up applicable period of time

For repeat frequencies, you can set up the applicable date and period of time for the time frame.

- a. Specify the start date and time in the **Start** field. A calendar date selector will appear when you click on the drop-down list of **date**. Click **<** or **>** to select the month, then pick a desired day in the calendar.
- b. Specify the end date and time in the **End** field if you have an end time for applying this time frame. If you do not have a terminating time for this time frame, select **Never Stop**.



### Set up repeat time interval

The repeat time intervals is "every N day(s)" as shown below. Repeat every 1 day means the time frame would apply for every day within the period of time.

|--|

### Repeat Frequency: Weekly Setting (Day-based)

To set up Weekly (Day-based) repeat frequency, please configure the following items: Daily time segments, applicable days within a week, applicable period of time, and repeat time interval.

Time Frame	
Time Frame Name         Load Template         Save as Template         Save	
Repeat Frequency Weekly Setting (Day-based)	
Weekly Setting (Day-based)	
Set time segments in a 24-hour day. Multiple segments are allowed.	
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	_ Daily Time segments
Daily timeline control bar (24h)	*You can drag more than one time segment
	per day.
End Time 00 🗘 00 🗘 Add Delete	. ,
Repeat on Sunday Monday Tuesday Wednesday Thursday Friday Saturday	Applicable days
	within a week
Range:	
Start 2010/ 1/28 💌 End 🔿 2010/ 1/28 💌	<ul> <li>Applicable period of</li> </ul>
<ul> <li>Never Stop</li> </ul>	time
Repeat every 1 🗘 Week(s)	- Repeat time interval

Set up daily time segments

Please refer to page 170 for detailed instructions.

Set up applicable days within a week

For repeat frequency--"Weekly (day based)", you can apply the time segments only on selected days of the week.

Repeat on 🗌 Sunday 📄 Monday 📄 Tuesday 📄 Wednesday 📄 Thursday 📄 Friday 📄 Saturday
--

Set up applicable period of time

Please refer to page 172 for detailed instructions.

### Set up repeat time interval

The repeat time intervals is "every N week(s)" as shown below. Repeat every 1 week means the time frame would apply for every week within the period of time.

	1	*	W-1775
Repeat every	1	v	Week(s)

### Repeat Frequency: Weekly Setting (Periods in a week)

To set up Weekly (Periods in a week) repeat frequency, please configure the following items: Time segments within a week, applicable period of time, and repeat time interval.

Time Frame	
Time Frame Name         Load Template         Save as Template         Save	
Repeat Frequency Weekly Setting (Periods in a week)	
Weekly Setting (Periods in a week)	
Set time segments in a week. Multiple segments are allowed.	
Sun Mon Tue Wed Thu Fri Sat	Time cogmonte within
Weekly timeline control bar	_ Time segments within
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	a week
Daily timeline control bar (24hr)	*You can drag more
Start Time Sunday 🔽 00 🗘 00 🗘	than one time segment
	per week.
End Time Sunday 🖌 00 🗢 🗘 Add Delete	
Range:	
Start 2010/ 1/28 👻 End 🔿 2010/ 1/28 💌	<ul> <li>Applicable period of</li> </ul>
	time
<ul> <li>Never Stop</li> </ul>	
Repeat every 1 🗘 Week(s)	– Repeat time interval
Repeat every 1 🗘 Week(s)	Repeat time interval

#### Set up time segments within a week

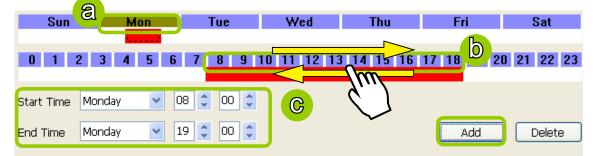
You can specify several time segments within a week. The **weekly timeline contol bar** represents the 7 days of a week, and the **daily timeline contol bar** represents the 24 hours in a day. The daily timeline control bar is only valid when one of the days on the weekly timeline control bar has been selected.

There are two ways to set up time segments: one is to use the computer mouse to draw the timeline control bars; the other is to fill in the precise start and end time value in the corresponding fields.

#### Add time segments: Choose either step 1 or step 2 to set up

- 1. Use the mouse to drag the timeline bars:
  - a. Click on a day on the weekly timeline control bar. The selected bar will turn green.
  - b. Left-click the daily timeline control bar and drag the mouse.
  - c. The corresponding time segment will also appear in the Start Time and End Time fields. Click **Add**, then the red timeline bars representing new time segments will appear as shown below. You can drag multiple time segments within a day and a week.

In the following illustration, the yellow arrows show the dragging direction of the mouse. You can drag from left to right or the opposite.



### 2. Fill in a precise Start Time and End Time:

- a. Directly select a day and enter the value in the Start Time and End Time fields, then click Add.
- b. The corresponding red timeline bars will automatically appear as shown below.

The following is an example of an extended time segment from Mon. 8:00 to Fri. 19:00.

	Sun		Mon		Tue	Wed	Thu	Fri		Sat
									b	
	0 1 3	23	45	67	89	10 11 12 1	3 14 15 16	6 17 18 19	20 21	22 23
a	Start Time	Monday	*	08 😂	00 🗘					
	End Time	Friday	*	19 🗘	00 🗘	J		Add		Delete

**Delete time segments:** Please refer to page 171 for detailed instructions.

Set up applicable period of time

Please refer to page 172 for detailed instructions.

Set up repeat time interval

Please refer to page 173 for detailed instructions.

### Repeat Frequency: Monthly Setting (Day-based)

To set up Monthly (Day-based) repeat frequency, please configure the following items: Daily time segments, applicable date(s) of a month/ day(s) of a week, applicable period of time, and repeat time interval.

Time Frame	
Time Frame Name Load Template Save as Template Save	
Repeat Frequency Monthly Setting (Day-based)	
Monthly Setting (Day-based)	
Set time segments in a 24-hour day. Multiple segments are allowed.	
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Daily time segments
Timeline control bar (24hr)	*You can drag more than one time segment
End Time 00 🗘 00 🗘 Add Delete	per day.
Repeat on Date (of a month)	_ Applicable date(s) of
January 💙 2010 🗘 Repeat on the following date(s) of a month:	a month/ day(s) of a week
Sun Mon Tue Wed Thu Fri Sat 1 2	WEEK
3 4 5 6 7 8 9 10 11 12 13 14 15 16	
10       11       12       13       14       15       10         17       18       19       20       21       22       23         24       25       26       27       28       29       30	
31	
Range:	
Start 2010/ 1/28 V End O 2010/ 1/28 V	<ul> <li>Applicable period of</li> </ul>
Never Stop	time
Repeat every 1 🗘 Month(s)	- Repeat time interval

Set up daily time segments

Please refer to page 170 for detailed instructions.

Set up applicable date(s) of a month/ day(s) of a week

For repeat frequency--"monthly (day-based)", you can apply the time segments only on selected days of a month. There are two types of repeat frequencies: Date(s) of a month and Day(s) of a week.

#### <u>Repeat by date(s) of a month:</u>

Select date(s) from the calendar, and it will be displayed on the right blank as shown below. The following example refers to the  $1^{st} \sim 5^{th}$  day of a month.

Repea	at on	Dat	te (o	famo	onth)	) 💽		
Janua	ary	~	2	010		*	Repeat on the following date(s) of a month:	
Sun	Mon	Tue	Wed	Thu	Fri		01 02	]
з	4	5	6	7	1 8	2 9	03	Delete
10	11				15		04 05	
17	18	19		21				
24	25	26	27	28	29	30		
31								1

#### Repeat by day(s) of a week:

Select day(s) from the calendar, and it will be displayed on the right blank as shown below. The following example refers to the  $1^{st} \sim 5^{th}$  Friday of a month.

Rep	eat or	n Da	iy (of	a we	ek)	~		
Jan	uary	*	2	2010		*	Repeat on the following day(s) of a month:	
Su	n Mor	n Tue	Wed	l Thu	Fri	Sat	1st Friday	
3	4	5	6	7	1 8	2 9	2nd Friday 3rd Friday 4th Friday	Delete
10		12	13	14	15	16	5th Friday	
17			20	21		23		
24		26	27	28	29	30		

Set up applicable period of time

Please refer to page 172 for detailed instructions.

Set up repeat time interval

The repeat time intervals is "every N month(s)" as shown below. Repeat every 1 month means the time frame would apply for every month within the period of time.

Repeat every	1	-	Month(s)
--------------	---	---	----------

### Repeat Frequency: Yearly Setting (Day-based)

To set up Yearly (Day-based) repeat frequency, please configure the following items: Daily time segments, applicable date(s) of a year/ day(s) of a week, applicable period of time, and repeat time interval.

Time Frame	
Time Frame Name Load Template Save as Template Save	
Repeat Frequency Yearly Setting (Day-based)	
Yearly Setting (Day-based)	
Set time segments in a 24-hour day. Multiple segments are allowed.	
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Daily time segments
Timeline control bar (24hr)	*You can drag more
Start Time 00 🗢 00 🗘	than one time segment
End Time 00 🗘 00 🗘 Add Delete	per day.
Repeat on Date (of a year)	_ Applicable date(s)
January 🗸 2010 🗘 Repeat on the following date(s) of a year:	of a year/ day(s) of a week
Sun Mon Tue Wed Thu Fri Sat	week
3 4 5 6 7 8 9 Delete	
10 11 12 13 14 15 16 17 18 19 20 21 22 23	
24 25 26 27 28 29 30	
Range:	
Start 2010/ 1/28 💌 End 🔿 2010/ 1/28 💌	<ul> <li>Applicable period of</li> </ul>
<ul> <li>Never Stop</li> </ul>	time
Repeat every 1 🗘 Year(s)	- Repeat time interval
	Repeat time interval

Set up daily time segments

Please refer to page 170 for detailed instructions.

Set up applicable date(s) of a year/ day(s) of a week

For repeat frequency--"yearly (day-based)", you can apply the time segments only on selected days of a year. There are two types of repeat frequencies: Date(s) of a year and Day(s) of a week.

#### <u>Repeat by date(s) of a year:</u>

Select date(s) from the calendar, and it will be displayed on the right blank as shown below. The following example refers to the  $1^{st} \sim 5^{th}$  day of a year.

January       2010       Repeat on the following date(s) of a year:         Sun Mon Tue Wed Thu Fri Sat       01/01	
Sun Mon Tue Wed Thu Fri Sat 01/01	
1 2 01/02	
3 4 3 6 7 8 9 01/03 01/04	Delete
17 18 19 20 21 22 23	
24 25 26 27 28 29 30	
31	

#### Repeat by day(s) of a week:

Select day(s) from the calendar, and it will be displayed on the right blank as shown below. The following example refers to the January  $1^{st} \sim 5^{th}$  Friday of a year.

Repeat on the following day(s) of a year:	
Fri Sat January 1st Friday	]
1 Inputry 2rd Eriday	
	Delete
22 23 January Strinnary	
29 30	
8 9 January 3rd Friday January 4th Friday 22 23 January 5th Friday	Delet

Set up applicable period of time

Please refer to page 172 for detailed instructions.

### Set up repeat time interval

The repeat time intervals is "every N year(s)" as shown below. Repeat every 1 year means the time frame would apply for every year within the period of time.

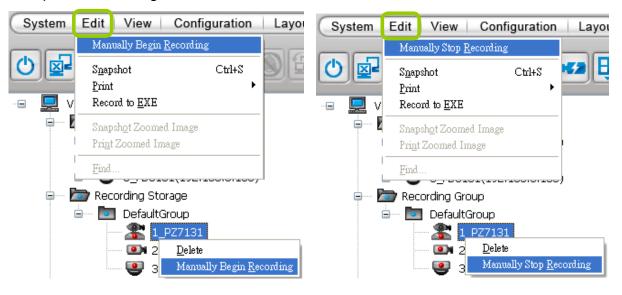
Repeat every	1	÷	Year(s)
--------------	---	---	---------

# How to Manually Begin /Stop Recording

By default, all devices are assigned to the default recording storage and default recording schedule. Therefore, once you insert a device onto the station, the VAST Server will begin to record live video according to the default recording schedule. Please refer to **How to Edit Recording Schedules** on page 161.

However, if you have changed the default schedule, you can manually click **Manually Begin Recording** to enable a device without setting up a recording schedule. Please follow the instructions below to manually begin recording.

Select the device from the hierarchical management tree under Default Group, then click Edit > Manually Begin Recording on the menu bar (or right-click the device and select Manually Begin Recording). The string on the menu bar will turn into Manually Stop Recording as shown below and the VAST Server will start to record video from the target camera. Please note that its priority will be higher than the recording schedule, so it will continue unless you click Manually Stop Recording. After you click Manually Stop Recording, the device will then follow the preset recording schedule.

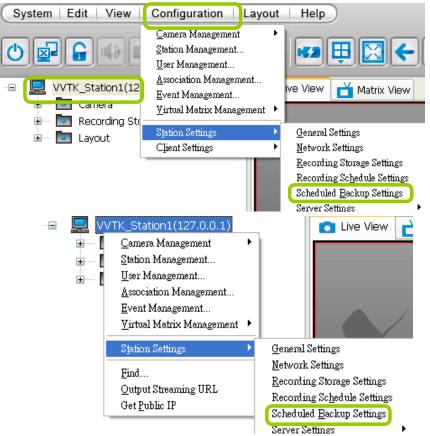


# How to Edit Scheduled Backup Settings

VAST LiveClient supports scheduled backup which allows the user to back up the recorded data in another disk.

Please follow the steps below to enable scheduled backup settings:

- a. Select the target station from the hierarchical management tree.
- b. Click **Configuration > Station Settings > Scheduled Backup Settings** on the menu bar (or **rightclick** the station and select **Station Settings > Scheduled Backup Settings**).



c. The Scheduled backup settings window will pop up.

## **Select Backup Source**

- d. Check Enable schedule backup.
- e. Select the data source you want to backup. If you check **Selected cameras**, you can click >> or << to choose the data source that you want to backup.

	Scheduled Bac	kup Settings			X
d	Enable schedu Select Backup So				
e	All Cameras	○ Selected camera	95		
	Name 1_FD8161 2_IP8330 3_PZ71x1	Host 192.168.5.101 192.168.5.102 192.168.3.101	Group DefaultGroup DefaultGroup DefaultGroup	->	

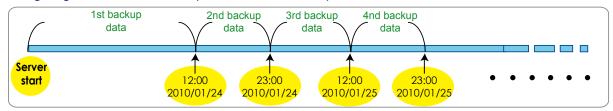
## Setup Backup Schedule

f. Fill in a desired time and click >> to add the backup time. Please note that the backup time interval must not less than 1 hour. For example, 23:40 and 00:15 are not allowed to exist simultaneously.

In the following example, the server will backup the recorded data at 12:00 PM and 23:00 PM everyday once you save the settings.

ſ	Backup time : [	12 🛟 : 00 🗘	-> <-	12:00 23:00	
L					

#### The following diagram shows the backup schedule and backup data:



## Select Backup Target

g. Click **Browse...** to select a path (local path or network storage) to store the backup data. Please note that the disk for backup data should be different from the original recording path, or a warning message will pop up as shown below. For more information about how to set up recording path, please refer to page 158.

🛛 Warning 🛛 🔀
Scheduled Backup Path cannot be assigned to the same disk as Recording Path.
QK

- h. Select a maximum size for backup folder. The server will divide backup data into the following size: VCD (650M), DVD (4.7G), Customize, or Unlimited size according to your choice.
- i. Select **Delete old backups if space is insufficient** if you want to do cylic backup due to the limited size of the hard disk.

	Select Backup Target	ר
g	Path : Browse	
h	Maximum folder size: Unlimited  Metwork	
1	Delete old backup data if space is insufficient.	
	Other Options	- -
A	Back up events only Pre-event time: $10$ $\bigcirc$ second(s) (2 ~ 20)	
J	Post-event time: 10 $\diamondsuit$ second(s) (2 ~ 20)	
	<u>O</u> K <u>C</u> ancel	j

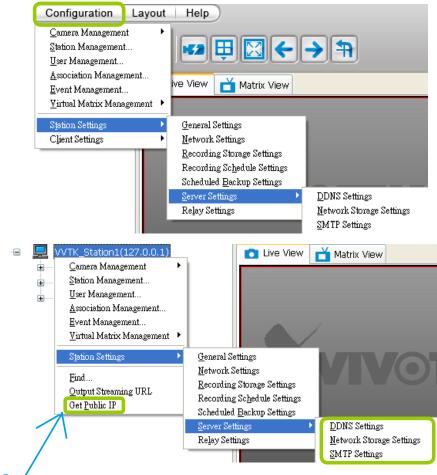
## **Other Options**

j. If you only want to backup the recorded data of events, select **Backup only events** and fill in the preand post-event time.

# How to Configure Station Server Settings

VAST LiveClient supports Server Settings including DDNS Settings, Network Storage Settings, and SMTP Settings.

Select the station from the hierarchical management tree and click **Configuration > Station Settings > Server Settings** to open the page (or **right-click** the station and select **Station Settings > Server Settings**).



## **DDNS Settings**

Since the <u>public IP</u> of VAST Server may be a dynamic IP address, DDNS service will give it a fixed domain name.

Select a DDNS provider from the provider drop-down list. VIVOTEK offers 2bthere.net (Safe100. net), a free dynamic domain name service, to VIVOTEK customers. Please refer to the user's manual of VIVOTEK's network camera for detailed DDNS settings.

V DDNS Settings			
DDNS: Dynamic do	nain name service		
Provider:	Dyndns.org(Dynamic)		
Host name:			
User name:			
Password:			
Save			

## **Network Storage Server Settings**

The VAST Server allows user to set up network storage path(s) for recorded files. Please follow the steps below to add a new network storage path.

a. Click **Add** to open the Network Host Window.

b. Fill in the related information for the network host. Then click **OK** to save the new settings.

🔨 Network Storage Server Settings 🛛 🗙	S PPY 🔊	Network Sorver	×
Storage Server List:	<u>A</u> ddress:	:	
Address Domain Account	-		
	<u>D</u> omain f	Name: Host	*
	<u>U</u> ser Nar	me: guest	
	Password	d: *****	
Add Edit Remove		ОК	Cancel

c. If you want to add more network host(s), please repeat step a. b.

🔮 Network Storage Server Settings 🛛 🔀				
Storage Server List:				
Address Domain Account				
192.168.5.122 VIVOTEK ritali				
Add Edit Remove				
Glose				

## **SMTP Settings**

VAST Server allows user to set up SMTP Server to send mail alert when event triggers. For more information about how to set up event management, please refer to page 139.

Please follow the steps below to configure the SMTP Server:

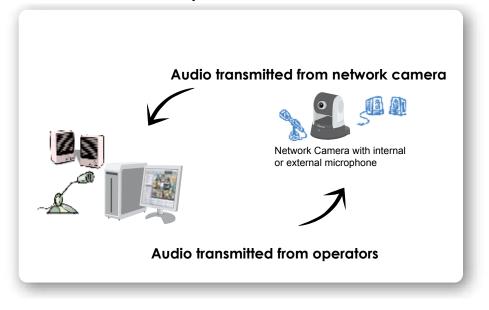
- a. Click Add to open the SMTP Settings page.
- b. Enter the related information of your mail server. If your SMTP server requires a secure connection (SSL), check **Use SSL**.
- c. Click **OK** to enable the settings.
- d. Then the new information will appear on the SMTP Settings window as shown below.

SMTP Settings	🧟 Edit SMTP Settings	
Address Authentication SSL	Server b Address:	Ms.vivotek.tw
	Port:	25
	Login Use authentication :	
a	User name:	ritali
Add Edit Remove	Password:	*****
	Use SSL:	
	0	OK Cancel
SMTP Settings		
Address Authentication SSL		
Ms.vivotek.tw Yes No		an barra mana dhara
	on	ou have more than e SMTP server, you n click to arrange the
	J pri	ority.
	⊆lose	

# How to Use the Talk Panel

VAST LiveClient supports the two way audio function which allows the user to communicate with people around the network camera. Please enable the two way audio function on the camera side.

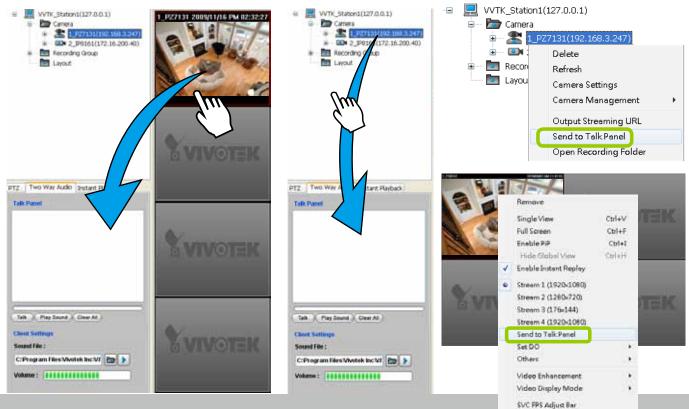
The following is an illustration of the two way audio function:



## Add a Camera to the Talk Panel

■ There are several ways to add a Network Camera to the Talk Panel:

Drag-and-drop a camera from the video cell or from the hierarchical management tree to the talk panel as shown below. You can also **right-click** the target camera or the video cell, then click **Send to Talk Panel** on the popup menu.



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■ An icon with the camera name will be displayed in the Talk Panel.

	PTZ Two Way Audio Instant Playback	
	Talk Panel	
	2 1_PZ7131	
	Click to play sound from the can	nera
Click to talk ——	Talk Play Sound Clear All	Remove all cameras from the Talk Panel
	Client Settings	Select sound from the
	Sound File :	file list
	C:\Program Files\Vivotek Inc\S1	<ul> <li>Click to play the selected sound on the client side</li> </ul>
	Volume :	sound on the client side
	Click to adjust volume	

- Please note that you cannot **Talk** and **Play Sound** at the same time.
- When you are talking or playing sound, you cannot add other cameras to the Talk Panel. If you want to add more cameras to the Talk Panel, please **Stop Talking** and **Stop Playing** first.

PTZ Two Way Audio Instant Playback	PTZ Two Way Audio Instant Playback		
Talk Panel	Talk Panel		
2 1_PZ7131	<b>2</b> 1_PZ7131		
1_F2(13)			
Click to stop talking	Click to stop playing		
Stop Play Sound Clear All	Talk Stop Playing Clear All		
Client Settings	Client Settings		
Sound File :	Sound File :		
C:\Program Files\Vivotek Inc\V/ 📄 🕨	C:\Program Files\Vivotek Inc\V/ 📄 🕨		
Volume :	Volume :		

## **Remove a Camera from the Talk Panel**

#### Remove a camera

Drag a camera from the Talk Panel and drop to the hierarchical management tree window as shown below. The camera icon will disappear.

WVTK_Station1(127.0.0.1)         Camera         Camera <tr< th=""></tr<>		
Mega-Pixel Network Came Mega-Pixel Network Came		
PTZ Two W y Audio Instant Playback       Talk Panel       20x Zoom       Mega-P		
Stop Play Sound Clear All		
Client Settings		
Sound File :		
C:\Program Files (x86)\VIVOTEI		
Volume :		

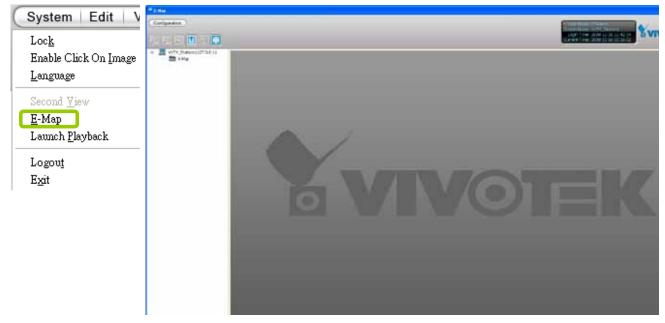
#### Remove all cameras

Click Clear All, all cameras in the Talk Panel will be removed.

# How to Configure E-map Settings

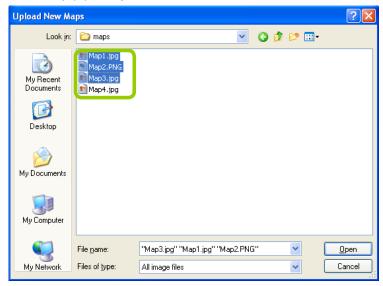
VAST LiveClient supports intuitive E-map function which allows users to upload E-maps for overall devices management.

Click **System > E-map** to open E-map Settings Page:



## **Upload an E-map**

Click 1 to search for E-map(s) to upload.



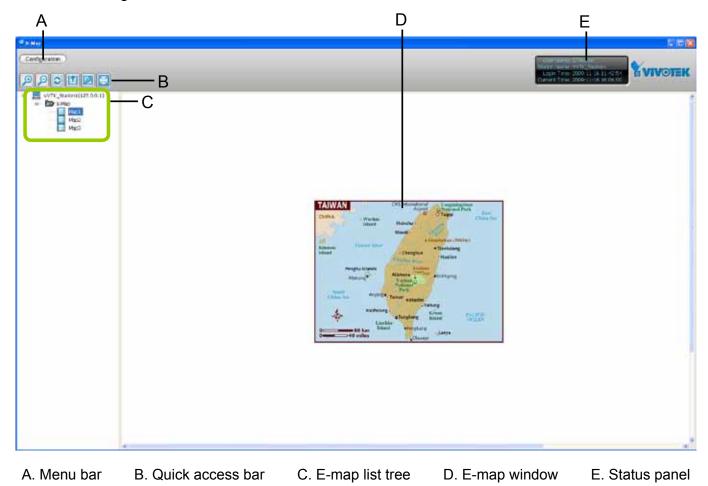
The uploaded E-maps will be listed under the E-map list tree.



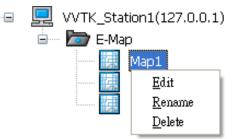
If the uploading procedure fails, please compress the image size of your map (equal or smaller than 2MB) and try again.

## User Interface of E-map Settings Page (View Mode)

Double-click an E-map on the tree, it will be displayed on the E-map window as shown below. There are two operation modes of E-map settings page: "View Mode" and "Edit Mode". The following is the "View Mode" illustration.



■ **Right-click** the E-map, then you can **Edit**, **Rename**, or **Delete** the E-map.



Right-click an E-map on the tree and click Edit or click on the Quick Access Bar, it will switch to edit mode.



## Quick Access Bar

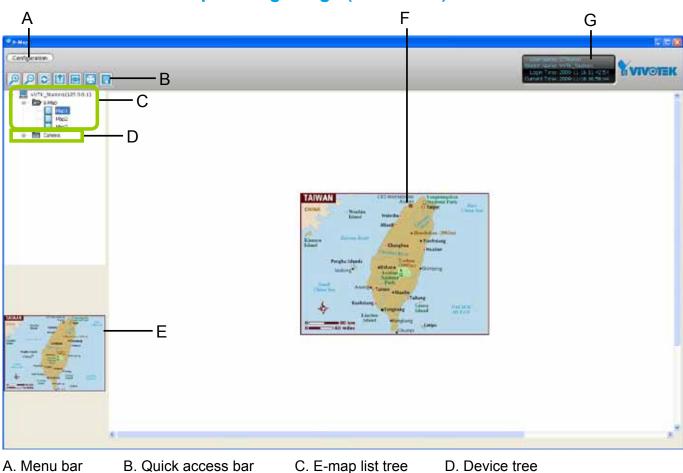


lcon	Function	Description
€	Zoom in	Zoom in the E-map
P	Zoom out	Zoom out the E-map
0	Default size	Adjust the E-map to default size
	Upload	Upload E-map to the login station
	View Mode	Click to switch to view mode
$\square$	Full Screen	Extend the E-map settings page to full screen
	Save	Save E-map settings

#### **Status Panel**

User Name: admin	CPU
Station Name: VVTK_Station1	35 %
Login Time: 2014-04-22 10:23:09	Memory
Current Time: 2014-04-22 11:14:54	61 %

User Name
Station Name (IP Address)
Login Time (yyyy-mm-dd hh:mm:ss)
Current Time (yyyy-mm-dd hh:mm:ss)



# User Interface of E-map Settings Page (Edit Mode)

E. Map preview

F. E-map window

G. Status panel

■ **Right-click** the E-map, you can **Edit, Rename**, or **Delete** the E-map.



## **Device Management**

Please follow the steps below to edit an uploaded E-map.

- a. **Double-click** the E-map you want to edit, it will be displayed on the E-map window.
- b. Use Quick Access Bar to adjust the size of the E-map. In edit mode, you can also use your mouse to drag the position of the E-map and zoom in or zoom out the E-map.
- c. Drag-and-drop the connected devices to the E-map according to your deployment.



d. **Right-click** the device icon on E-map, you can **rotate** the direction or **delete** the device. The device can be rotated in 8 derections as shown below.



e. You can also drag the DI/DO device under the connected device onto the E-map. If you want to change the status of the **DO** device, **double click** the DO icon on E-map.

For more information about DI/DO settings, please refer to Association Management on page 137.



f. Click 📃 on the Quick Access Bar to save the new settings.

The red frame twinkling around the device means there is event trigger(s) going on. Meanwhile, a live view dialog will pop up beside the model.



## **Live View Dialog Settings**

Click **Configuration** > **E-map Settings** to open the E-map Settings dialog, then you can choose to **Open Live View Dialog** or to **Send to Single View** when you double-click the device deployed on the E-map.

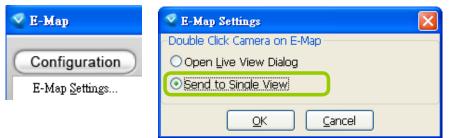
## **Open Live View Dialog**

Select **Open Live View Dialog**: When you **double-click** the device icon on the E-map or when an event triggers, a live view dialog will pop up beside it. It is the default setting in E-map Settings window.

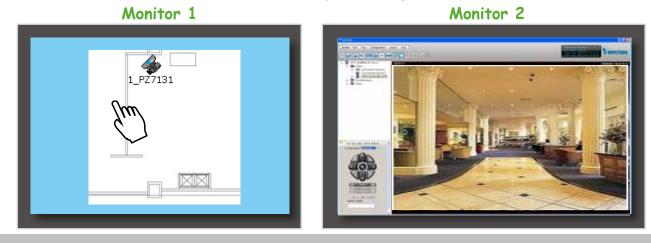
🔹 E-Map Settings 🛛 🗙	
Double Click Camera on E-Map	(m_PZ7131
Open Live View Dialog	✓ 1_PZ/131
O Send to <u>S</u> ingle View	2009/11/17 AM 10:21:26
OK Cancel	
	Double Click Camera on E-Map     Open Live View Dialog     Send to Single View

#### Send to Single View

Select **Send to Single View**: When you **double-click** the device icon on the E-map, it will open a single view on the VAST LiveClient.



If you have set up dual monitor, it will be automatically sent a single view to the second monitor.





The live view dialog also supports **click on image**, **PTZ**, and **e-PTZ** as long as the linked device supports and enables those functions. To enable those function on E-map, please check the item "Enable click on image" on the menu bar of LiveClient as shown below. Then an icon will appear in the live view dialog for you to control the cameras.

System	Edit	View	C
Lock		Ctrl+L	,
Enable Clic	k On <u>I</u> m	age	
<u>L</u> anguage			•
Second <u>V</u> ie	W		
<u>E</u> -Map			
Launch <u>P</u> lay	yback		
Logout			
Exit			



# E-map Link

After completing device deployment on your E-map, you can link an E-map to another E-map. Please follow the steps below to configure E-map link:

a. Select a map you want to edit and enter Edit Mode.



b. **Drag-and-drop** another E-map onto current E-map. A blue frame will appear as shown below. For example: Link Map1 to Map2 by dargging Map2 onto Map1

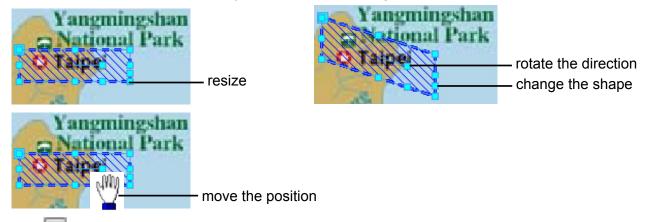


c. Use  $\bigoplus$  to move the position of the blue frame.

d. Right-click the blue frame to Resize or Delete it.



Click **Resize**, some nodes will appear around the blue frame. Then You can drag the nodes to move the position, rotate the direction, adjust the size, and change the shape.

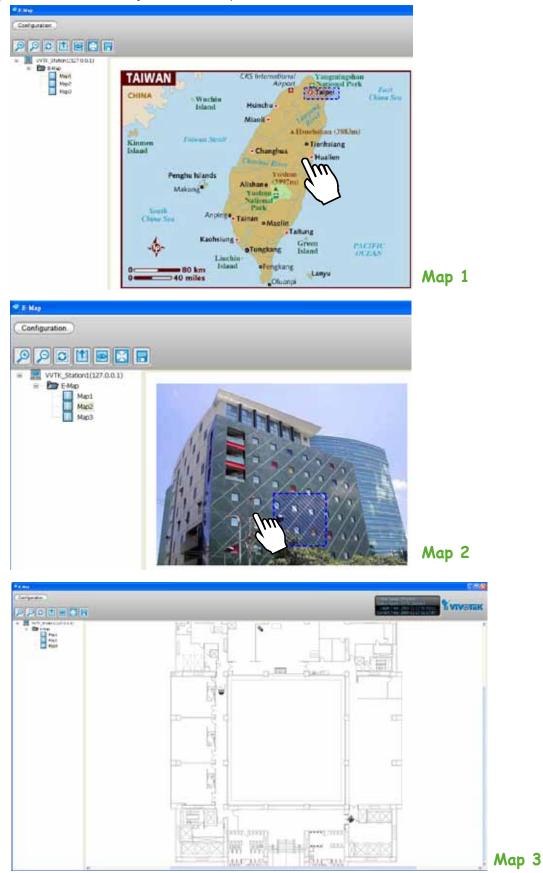


- e. Click 🗐 on the Quick Access Bar to save the new settings.
- f. If you want to set additional map links, please repeat steps a. ~ e. For example: Link Map2 to Map3 by dargging Map3 onto Map2



g. Click 同 on the Quick Access Bar to save the new settings.

h. Test the web links. Click 🔤 on the Quick Access Bar to switch to view mode. **Double-click** the blue frame on Map1, it will automatically switch to map2. Then **double-click** the blue frame on Map2, it will automatically switch to map3.



# How to Configure Client Settings

In Client Settings, you can configure Snapshot Settings, Recording Settings, View Settings, General Settings, Joystick Settings, Proxy Settings, and PiP Settings.

Configuration Layout Help		
Camera Management Camera Management Station Management User Management Association Management Event Management Virtual Matrix Management		E E C T
Station Settings	LC	
Client Settings		Snapshot Settings
Video Enhancement		Recording Settings View Settings General Settings Joystick Settings Proxy Settings PiP Settings

## **Snapshot Settings**

Please follow the steps below to configure snapshot settings:

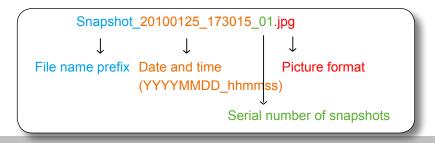
- a. Click **Configuration > Client Settings > Snapshot Settings** on the menu bar to open the **Snapshot Settings** window.
- b. Select a picture format for snapshots (**BMP** or **JPEG**). If you select **JPEG** format, you can adjust the recompression quality (from 1 to 100). Note that a higher value would generate higher picture quality but lower compression rate.
- c. Fill in a filename prefix for the snapshots.
- d. The default storage path for snapshots is C:\Users\Public\Documents\VIVOTEKInc\VAST\Client\ LiveClient. If you want to change the storage path, click **Browse** \_\_\_\_ to select another folder.

	Snapshot Settings	
	🔲 Generate a file name	automatically, (YYYYMMDD_HHMMSS)
b	Format:	BMP files (*.bmp) 🔻
	Recompression Quality:	90 🔍
	Prefix:	6
Q	Save to:	C:\ProgramData\Documents\VIVOTEK Inc\'
		OK Cancel



The recompression quality is only enabled in MPEG-4 streaming. If your stream source is MJPEG, the system will directly save the JPEG image without recompression.

e. If you check **Generate a file name automatically**, VAST will directly save snapshots with the following filename format to the storage folder.



If you uncheck **Generate a file name automatically**, the **Save file** dialog box will pop up when you take a snapshot. The file name prefix will automatically be displayed in the Save File dialog box.

Save file					? 🗙
Save in:	🗀 Snapshot		•	+ 🗈 💣	
My Recent Documents Desktop					
My Documents					
My Computer					
My Network Places	File name:	Snapshot_		-	Save
	Save as type:	JPEG files (*.jpg)		•	Cancel

#### Take a Snapshot

Please follow the steps below to take a snapshot of the live video stream:

- a. Select the video cell of which you want to take a snapshot.
- b. Click **Snapshot** on the quick access bar, or **right-click** the video cell and select **Others** > **Snapshot** from the popup menu. You also can click **Edit** > **Snapshot** to take a snapshot.



c. The snapshots will be found in the preset storage folder on your local computer.

## **Recording Settings**

The VAST Server allows you to record the live video in EXE, 3GP, or AVI format to your storage folder.

#### Type 1: Record to EXE

Record video as an EXE file. The EXE is not only a media file but also a built-in media player. When user execute the EXE, the media file will be played automatically. There is no need to install any other program. For more information about how to use the EXE player, please refer to page 204.

Please follow the steps below to configure EXE record settings:

- a. Click **Configuration > Client Settings > Recording Settings** on the menu bar to open the **Recording Settings** window.
- b. Select **EXE** as the Record Type.
- c. The default storage path is C:\Users\Public\Documents\VIVOTEK Inc\VAST\Client\LiveClient\Record. If you want to change the storage path, click **Browse** loselect another folder.
- d. Select the Length of each file-- Maximum Size (11~2000MB) or Maximum Time Interval (1~150 min).

Í	•	Recordi	ng Set	ttings					×
	Record Type: O 3GP				Record video in player along wit results in autom install a separate	h the media file. atic playback, eli	Executing t iminating the	he file	
C		Save to:	C:\Pi	rogramDa	ata\Documents\\	'IVOTEK Inc\VA	ST\Client\Liv	eClie	)
d		<ul> <li>Length</li> <li>Maxin</li> <li>11</li> </ul>		ach File Size	1500	🔘 Maximum Tir		000	
					1300	0		(M	в)
					ОК	Cancel			

e. Click **OK** to enable the settings.

#### Type 2: Record to 3GP

Record video as a 3GP file. 3GP file is a standard MP4 format compatible with players such as VLC player. Choose this type if you has already installed one of these players.

Please follow the steps below to configure 3GP record settings:

- a. Click **Configuration > Client Settings > Recording Settings** on the menu bar to open the **Recording Settings** window.
- b. Select **3GP** as the Record Type.
- c. The default storage path is C:\Users\Public\Documents\VIVOTEK Inc\VAST\Client\LiveClient\Record. If you want to change the storage path, click **Browse** to select another folder.
- d. Select the Length of each file-- Maximum Size (1~2000MB) or Maximum Time Interval (1~150 min).

ĺ	♥ Recording Settings
	<ul> <li>EXE Record video as a 3GP file, a standard MP4 format compatible with players such as VLC, QuickTime, or RealOne. Choose this format if you have already installed one of these players.</li> </ul>
C	Save to: C:\ProgramData\Documents\VIVOTEK Inc\VAST\Client\LiveClie
d	Length of Each File Maximum Size Maximum Time Interval 1 1500 2000 (MB)
8	3GP Settings Record with only standard codec OK Cancel

- e. If you check "Record with only standard codec", the video from old models (VIVOTEK 6000-series products) using H.263 codec will not be recorded.
- f. Click **OK** to enable the settings.

#### Type 3: Record to AVI

Record video as an AVI file, which uses the popular codecs pre-installed in the Windows OS. Please note that the speed may be slower due to the need of decoding the video/audio and re-encoding both into a compatible codec.

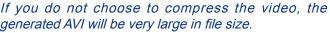
Please follow the steps below to configure AVI record settings:

- a. Click **Configuration > Client Settings > Recording Settings** on the menu bar to open the **Recording Settings** window.
- b. Select **AVI** as the Record Type.
- c. The default storage path is C:\Users\Public\Documents\VIVOTEK Inc\VAST\Client\LiveClient\Record. If you want to change the storage path, click **Browse** to select another folder.
- d. Select the Length of each file-- Maximum Size (1~2000MB) or Maximum Time Interval (1~150 min).

	✓ Recording Settings	
	<ul> <li>EXE</li> <li>Record video as an AVI file, which uses the popular codecs pre-installed in the Windows OS. Please note that the speed may be slower due to the need to decode the video/audio and re-encode into a compatible codec.</li> </ul>	
C	Save to: C:\ProgramData\Documents\VIVOTEK Inc\VAST\Client\LiveClie	Due to the AVI file has a limitation on
d	Length of Each File	the maximum file size of 2G bytes, in
<u>e</u>	Maximum Size Maximum Time Interval	the setting "time length" generates data
	1 1500 2000 (MB)	larger than 2G bytes, several files will be created.
	AVI Settings	
	AVI Frame Rate: 15 📄 (1 ~30)	
	f Video Compression Setting Audio Compression Setting	
	OK Cancel	

- e. Select the frame rate/ per second.
- f. To modify the video compression settings, click Video Compression Setting to open the AVI Video Compression Setting window. Select the desired video compression algorithm, compression quality, key frame intervals, and data rate in the corresponding fields.

compressor:	OK
Cinepak Codec by Radius	Cancel
Compression <u>Q</u> uality: 100	
✓ Key Frame Every 15	frames
✓ Data Rate 300	KB/sec



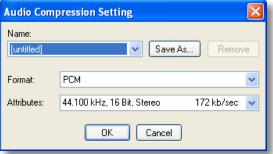
To modify the settings of the compression algorithm: Click **Configure**, then a dialog box will pop up for you to modify the settings. The dialog box will be different according to the compressor you select.



To read the information of a compression algorithm (its version for instance): Click About, and a dialog box will pop up showing the related information. The dialog box will be different according to the compressor you select.



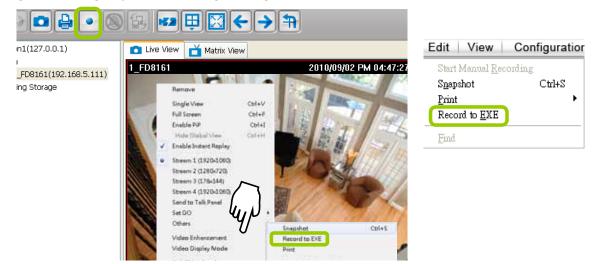
g. To modify the audio compression settings, click **Audio Compression Setting** to open the AVI Audio Compression Setting window. Select the desired **audio quality, format**, and **attributes** in the corresponding fields.



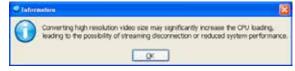
#### Record an EXE/3GP/AVI File

Please follow the steps below to record an EXE/3GP/AVI file of a live video stream:

- a. Select a video cell or a device from the heirarchical management tree which you want to record to media file.
- b. Click **Record to EXE/3GP/AVI** on the quick access bar, or **right-click** the video cell and click Record to EXE/3GP/AVI. You can also click Edit > Record to EXE/3GP/AVI on the menu bar. (The UI string will change according to your Recording Settings.)



c. For recording a high-resolution video (1600 x 1200) in AVI type, a dialog box will pop up as shown below to remind you that the CPU loading will increase. Click **OK** to continue the process.



d. The icon vill then change to **Recording EXE/3GP/AVI**, and a red text string (**EXE/3GP/AVI**) will appear at the bottom right of the video cell. Note that only one video channel can be recorded at a time.



If you save your video via a LiveClient installed on another computer, the videos will be placed in where you installed the LiveClient utility: e.g., C:II VAST\Client\LiveClient\Record. On Windows XP: C:\Documents and Settings\All Users\Documents\ VIVOTEK Inc\VAST\Client\LiveClient\Record

e. When you want to terminate the AVI Recording, click the icon 💽 on the Quick Access Bar. The export process will then terminate and the button will change from **o** to **o**. The recorded media files will be found in the preset storage folder on your local computer as shown below.

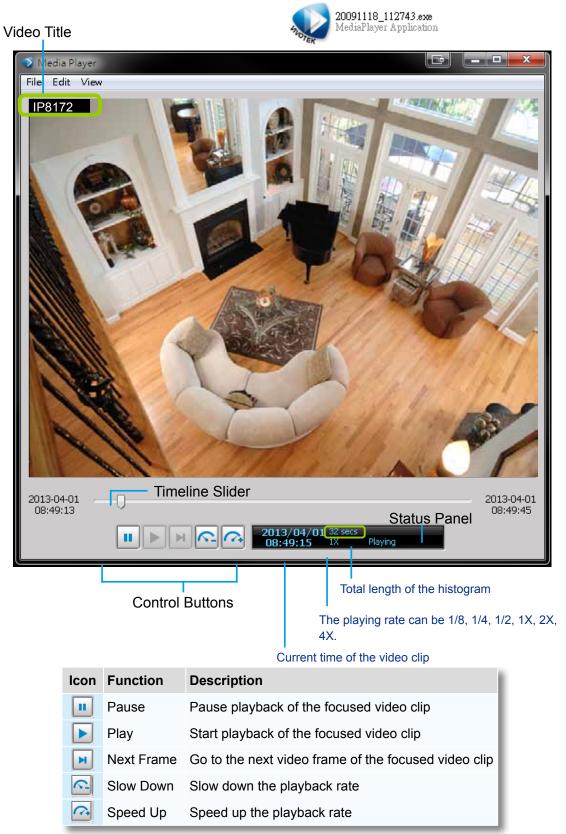
Below is the file name format for AVI files:



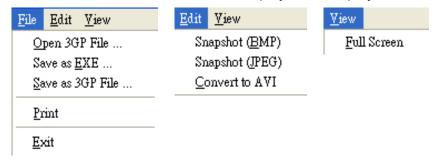
3GPP Movie

#### Built-in Media Player--EXE

Below is the icon of footages saved as EXE files. Double-click on it, the recorded video will be played automatically as shown below. You may also open the built-in Media Player in the default location: C:\Program Files\VIVOTEK Inc\VAST\Client\LiveClient. On Windows XP: C:\Documents and Settings\All Users\Documents\VIVOTEK Inc\VAST\Client\LiveClient\Record.



The function menu of the built-in media player are displayed as shown below:



- The built-in player is able to playback 3GP and EXE files.
- The built-in player is able to save 3GP files as EXE files.
- The built-in player is able to save EXE files as 3GP files.
- The built-in player is able to convert EXE and 3GP files into AVI files.
- The built-in player also supports snapshot and print functions.

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			_	

Below are special notices related to video recording with the fisheye cameras:

- For recorded videos from the fisheye cameras, only the built-in Media Player can playback the Regional or Panoramic views. If you access the recorded videos using other playback software, you will end up seeing the circular-shape Original view.
- When recording videos from fisheye cameras, Regional and Panoramic views can only be preserved in the EXE and 3GP format. If you save the dewarped views, i.e., Regional and Panoramic, as AVIs, only the circular Original view will be preserved.
- Currently the video playback on the Emap window displays the Original view only.
- To display a Regional or Panoramic view, right-click on the Media Player window.



## **View Settings**

This section allows you to set the display mode of a video cell, including Display Location, Date and time Format, Video Display Mode, and Font Settings. When you change the settings, the sample window will change accordingly for you to preview the settings.

View Settings		
Display Location		
Display Area 1: Camer	a Name 💌	Camera Name     2014/10/1 下午 03:25:31
Display Area 2: Server	Date & Time 🔹	This is a sample screen.
Display Area 3: Video	Title 💌	
Display Area 4: No Dis	play 💌	Video Title
Date and Time Format		Font Settings
Same as Local Comput	er	Font: System -
Specify		Color:
Date Format: YYYY/M	IM/DD 👻	Size: 10 🔻
Time Format: Default	Time Format 👻	
Video Display Mode		
💿 Hide borders 🛛 🔘 Keep	o top/down borders 🛛 🔘 Keep the	ne aspect ratio
Show motion windows	; when triggered	
	message when video is lost	
Show VCA rules	OK	Cancel

## **Display Location**

blay Location	Display Area 1	Display Area 2
Display Location		
Display Area 1: Camera Nar	ne Camera Name	2014/10/1 下午 03:25:31
Display Area 2: Server Date		sample screen.
Display Area 3: Video Title	·	
Display Area 4: No Display	Video, Title	
di seconda d		

As the illustration shows, there are 4 display areas for you to input information about the live video. Each drop-down list includes many options for you to select: No display, Camera Name, Video Title, Camera Date & Time, Camera DateTime, Server Date & Time, Codec & Resolution, Address, and Network throughput & FPS.

#### Date and Time Format

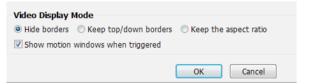
Date and Time Format				
Same as Local Computer				
© Specify				
Date Format: YYYY/MM/DD				
Time Format: Default Time Format				

- Same as local computer: Select this option and then the date and time format will synchronize with the local computer.
- Specify: Select a desired format for the date and time from the drop-down list.

Date format: Select YYYY/MM/DD or MM/DD/YY.

Time format: Select the default time format (synchronize with the local computer), 12h AM/PM, or 24h.

## Video Display Mode



- Keep the aspect ratio: In the default settings, the size of the video window will change according to the layout of the live view window you choose. However, the frame size may be distorted.
- Keep top/down borders: the camera name, video title, and time will be displayed on the black borders instead of displaying floating text on the screen.



- Keep the aspect ratio: If you select Keep the aspect ratio, the video window will be adjusted to the same frame size as the preview window. This function is disabled as default.
- Show motion window when triggered: If you select this option, the red frame of the motion detection window will appear in the video window when motion is triggered. This function is enabled as default.
- Display the connecting message when video is lost:indow will appear in the video window when motion is triggered. This function is enabled as default.
- Show VCA rules: VCA rules refer to the Line Crossing and Field Detection lines drawn on individual video screens. These VCA functions are configured on the web consoles with cameras, not on the VAST LiveClient.

The Display options can also be accessed by a right-click on the view cell.

For detailed information about how to set up the layout of the live view window, please refer to **How to Change Video Viewing Mode** on page 114.

## Font Settings

This function allows you to change the font on the video cell.

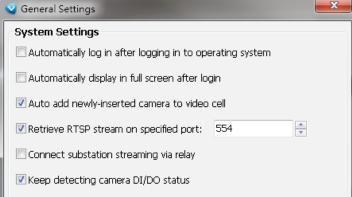
- Font: Automatically lists all fonts installed on your operating system. Select the desired type.
- Color: Select a desired font color (white, red, green, blue).
- Size: Select a desired font size (8, 10, 12, 14).

Font Settings				
Font:	System -			
Color:	•			
Size:	10 🔻			



## **General Settings**

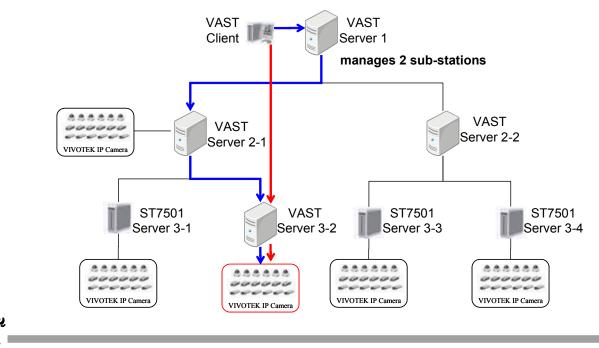
This section allows you to configure the System Settings and Rotation Settings.



## System Settings

🔲 Sort camera by name

- Auto login after logging in to operating system: If you check this option, VAST LiveClient will
  automatically login after you login to Windows without filling in the user name and password. This
  function is disabled as default.
- Automatically display in full screen after login: If you check this option, the video cells will be displayed in full screen without showing the menu bar or the control panels.
- Auto add newly-inserted camera to video cell: If you check this option, VAST LiveClient will
  automatically add the newly-inserted device to a video cell. This function is enabled as default.
- Retrieve RTSP streaming on specific port: The default port for RTSP streaming is 4543. If you want to change this port, please check this item and fill in a desired port number.
- Setup substation streaming via relay: This option is not checked by default. As the following diagram shows, VAST Client might directly connect to the streaming under VAST Server 3-2 without requesting the connection via VAST Server 1 and Server 2-1. If you want to get streaming through relaying, please check this option.



If the VAST Server 3-2 is set up behind a firewall, the VAST Client will not be able to access the VAST Server 3-2 directly. You have to get the connetion by relaying.

- Keep detecting camera DI/DO status: The default for this option is enabled. This option enables the VAST server to monitor the DI/DO status from the configured cameras. You may also disable this option.
- Sort camera by name: The positions of cameras on the device tree will be sorted by their camera names.

Alarm Settings	
Enable live alarm notification	
Enable alert sound(s)	
Alarm window mode: <ul> <li>Fixed</li> </ul>	
🔘 Рорир	
Rotation Settings	
Enable rotation after login	
Rotate the page every 10 second(s) (3 ~ 999)	
Display Settings	
Maximum number of view cells 64 🚔 (64 ~ 320)	
✓ Enable auto stream size: Quality first	
Enable de-interlace function	
Enable Instant Replay on video cell	
Default replay length: 30 seconds 👻	
Local streaming buffer time: 0 $\checkmark$ millisecond(s) (0 ~ 10000)	

#### Alarm Settings

- Enable live alarm notification: Select this option to activate real-time event notification. For example: the event notification of DI/O status on the hierarchical management tree, the event list in the event window, motion detection windows in video window, or the event notification on E-map settings page, etc. This function is enabled as default.
- Enable alert sound(s): If you enable this option, you will hear alert sound on the client side when the event is triggered..
- Alarm window mode: Select Fixed or Popup mode for the event window. For more information about event window, please refer to page 75.

#### **Rotation Settings**

- Enable rotation after login: If you check this option, the video cells will start to rotate after you login to the VAST LiveClient. The default setting of this function is disabled.
- Rotate the page every second(s): Fill in a desired interval time for video page rotation. The maximum value is 99 seconds. The default value is set at 6 seconds.

For detailed information about how to set up the layout of the monitoring window and rotation functions, please refer to **How to Change Video Viewing Mode** on page 114.

	Display Settings
Display Settings	Maximum number of view cells 64 🔷
Biopiay Counigo	✓ Enable auto stream size: Quality first
	Enable de-interlace function
	Enable Instant Replay on video cell
	Default replay length: 30 seconds 👻
	Local streaming buffer time: 0 $\bigcirc$ millisecond(s) (0 ~ 10000)
	OK Cancel
	OK Cancel

- Maximum number of view cells: This determines the number of view cell on window, and also takes effect with the number of layout pages. For example, if there are 320 channels using the 1+31 layout, there will be 10 layout pages in the LiveClient window. The configuration changes take effect after the LiveClient is re-started.
- Enable auto stream size: The Auto Stream Size feature dynamically adjusts the stream sizes of video feeds from network cameras in order to reduce CPU load and bandwidth consumption.

It is often the case that in surveillance deployments the physical dimensions of monitors, the effectiveness of visual stimulus, and the operators' regions of interest can all be very limited. Streaming large-size videos at all times will be a waste of bandwidth and system computing power. CIF and VGA size videos are usually sufficient for the operators watching surveillance screens.

When enabled, your LiveClient station automatically requests smaller-size streams as video feeds (any from streams  $#1 \sim #4$ ) from the network cameras. For example, the frame size of video stream #4 will be reduced to 320x240 (CIF). Depending on the actual size of view cells on the LiveClient monitoring screen, the VAST server automatically requests different video streams.

When the size of view cells is manually expanded, a VAST server requests a different stream. This is called **Stream Jump**. Shown below are the details of the corresponding stream jumps.

View cell size	Stream jump to			
4:3 resolutions				
<= 320x240	stream #4 (CIF)			
> 320x240 or 640x480	stream #1			
16:9 resolutions				
<= 384x216	stream #4 (CIF)			
> 384x216 or 640x360	stream #1			
1:1 (fisheye cameras)				
<= 384x384	stream #4 (CIF)			
> 384x384 or 640x640	stream #1			

Facts about Auto Stream Size:

- The Auto Stream Size takes effect when,
  - 1. The size of view cell is changed.
  - 2. Inserting a new camera, or when the "Auto add newly-inserted camera" feature is applied.
  - 3. Double-click or click-and-drag cameras into view cells.
  - 4. When Auto Stream Size feature is enabled (the configuration on this window).
  - 5. Through the layout change.
- The LiveClient utility automatically adjusts stream selection according to the size of view cells, no user's configuration is required.

- The frame size of stream #1 is user-configurable. The VAST server only resizes stream #4.
- If a user disables the Auto Stream Size function later, the frame size of stream #4 will not be restored to the previous configuration. Stream jump takes place on the display of all connected cameras once the function is enabled.
- The Auto Stream Size function does not apply to the Matrix view.
- If users configured a region of interest before the Auto Stream Size function is applied, e.g., via the ePTZ control, the view cell might display a different live view.
- Below is the general rule for stream selection:

	stream # configured into VGA	stream # configured into CIF
4 streams cameras	Stream 2	Stream 4
3 streams cameras	Stream 2	Stream 3
2 streams cameras	none	Stream 2

- When a smaller stream is selected, the video quality is set to fixed quality as Good.
- The Maximum frame rate is not configured.
- The VAST server automatically selects a video resolution of a specific aspect ratio that best fits the current view cell, and places the video into the view cell.

#### Limitations:

- For older, single-stream cameras, the Auto Stream Size feature does not take effect.
- When the Auto Stream Size feature is enabled, the NR and ND series NVR configured under the VAST server will be considered as substations. The stream configuration of cameras managed by these NVR substations will not be changed. Only the video codec, bit rate, and frame rate of the video feeds directed through these NVR substations will be changed into a more economic setting.
- For the NVR, the Auto Stream Size function may not fully apply. For cameras managed by the NVR, the following will apply:
  - Large view cell: default viewing stream.
  - Medium view cell: stream #2.
  - Small view cell: the last stream.
- a user disables the Auto Stream Size function later, the frame size of stream #4 will not be restored to the previous configuration.
- Enable de-interlace function: Select this option if your connected device does not support de-interlace function. For example: VS7100.
- Enable Instant Replay on video cell: Here you can change the duration of a playback that happened immediately before a user utilizes the instant playback function.
- Local streaming buffer time: Video frames can be temporarily stored on the cache memory of the VAST server for a short, configurable period of time before they are displayed on the Liveview. If the networking condition is less than ideal, this can help delivering a smooth video stream. Note that this feature is not available on a Matrix view and the web console.

## **Joystick Settings**

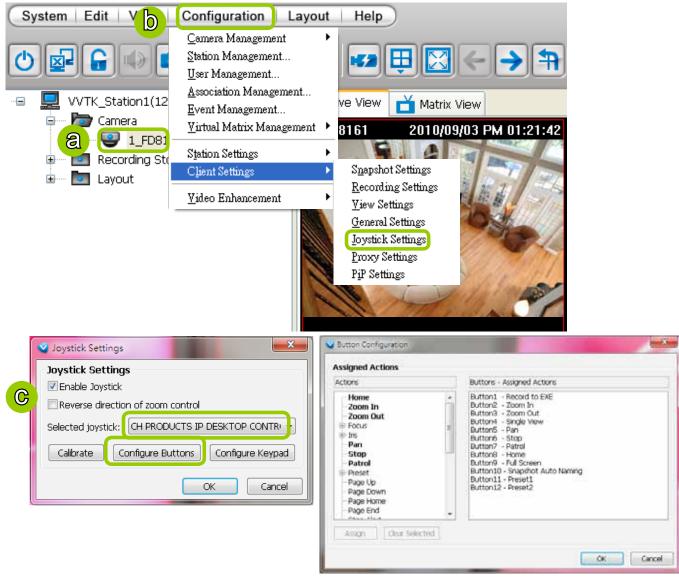
This section explains how to remote control connected network devices with a USB joystick. It's easy to install and configure via the USB interface.

#### Enable Joystick

Connect to the USB plug of the joystick to a USB port on your computer. Supported by the plug-in in the main page (Microsoft's DirectX), once the plug-in in the main page is loaded, it will automatically detect if there is any joystick on the computer. The joystick should work properly without installing any other driver or software.

Then you can begin to configure the joystick settings of connected devices. Please follow the instruction below to enable joystick settings.

- a. Select the target device from the hierarchical management tree.
- b. Click **Configuration > Client Settings > Joystick Settings** on the menu bar to open the **Joystick Settings** window. If your joystick is working properly, it will be displayed on the drop-down list.
- c. Select the joystick you want to configure. Check **Enable Joystick**, then click **Configure Buttons** to open Buttons configuration window.



#### Reverse direction of zoom control

Due to different designs in joystick zoom wheel, you can select this checkbox to reverse the zoom in/out directions.



#### **Buttons Configuration**

In Button Configuration window, the left column shows the actions you can assign, and the right column shows the functional buttons and assigned actions. The number of buttons may differ from different joysticks.

Please follow the steps below to configure your joystick buttons:

a. Choosing one of the actions and click **Assign** will pop up a dialog. Then you can assign this action to a button by pressing the joystick button or select it from the drop-down list.

For example: Assign Home (move to home position) to Button 1.

Suttons Configuration				×
Assigned Actions				
Actions		Buttons	Assigne	ed Actions
Home Zoom In	^	Button1 Button2		
- Zoom Out	🤕 "1	Iome"		×
■ Focus				
⊞ Iris				
- Pan - Stop		ess the joystick bu ect the button fr		o assign to "Home" or
Patrol	Seit	et the batton in	omune	ISC DEIOW,
			~	
- Page Up	Bu	tton1		
- Page Down		tton2		
Record to AVI		tton3		
Snapshot Auto Naming		tton4 tton5		
		tton6		
Assign Clear Selected		tton7		
		tton8 tton9		<u>Q</u> K <u>C</u> ancel
		tton10		OK <u>C</u> ancel
	Bu	tton11		
	Bu	tton12		]

b. Click **OK** to confirm the configuration.

🤜 Buttons Config	guration	×
Assigned Actions Actions Actions Actions Com In Com Out Focus Fis Pan Stop Patrol Preset Pres	Fress the joystick button to assign to "Home" or select the button from the list below.   Button1   Click "Ok" to assign "" to button1	
Assign	Clear Selected	
	<u></u> K	<u>C</u> ancel

c. The Assigned Action will appear beside Button 1 in the right column as shown in the following diagram. Note that a button can only be assigned with an action. If you want to modify the settings, select the action on the list and click **Clear Selected**.

Suttons Configuration				D	<
Buttons Configuration      Assigned Actions      Actions      Home      Zoom In      Zoom Out      Focus      Iris      Pan      Stop      Patrol      Preset      Page Up      Page Down      Record to AVI      Snapshot Auto Naming      Dut	Buttons Button1 Button2 Button3 Button4 Button5 Button6 Button7 Button8 Button9 Button9 Button10 Button11 Button12	Assign	ed Actions		
Assign Clear Selected			<u>о</u> к	<u>C</u> ancel	

d. If you want to assign additional actions, repeat step a.~c. When all settings are complete, click **OK** to save the settings or click **Cancel** to discard the settings. You may also assign buttons to jump around matrix screens.

Sutton Configuration Assigned Actions	
Assigned Actions          Actions         Actions	Buttons - Assigned Actions Button1 - Record to EXE Button2 - Zoom In Button3 - Zoom Out Button4 - Single View Button5 - Pan Button6 - Stop Button7 - Patrol Button7 - Patrol Button8 - Home Button9 - Full Screen Button10 - Snapshot Auto Naming Button11 - Preset1
Assign Clear Selected	Button12 - Preset2

e. Click **OK** to save the settings or click **Cancel** to discard the settings.

🔮 Joystick Settings		×
Joystick Settings Enable Joystick		
Selected joystick:	CH PRODUCTS IP DESKTOP CON	
	Calibrate Configure Buttons	
		!



- If you want to assign Preset actions to your joystick, the preset locations should be set up in advance.
- If your joystick is not working properly, it may need to be calibrated. Click Calibrate to open the Game Controllers window located in the MS Windows control panel and follow the instructions for trouble shooting. For more information, please refer to the MS Windows help files for details.

🔮 Joystick Settings		×
Joystick Settings Enable Joystick		
Selected joystick:	CH PRODUCTS IP DESKTOP CON	
	Calibrate Configure Buttons	
	QK Cance	!

The joystick will appear in the Game Controllers list in the Windows Control Panel on your computer. If you want to check out your device, go to the following page: Open Start > Control Panel > Game Controllers.

Game Controllers	? 🛛
These settings help you configure the game your computer.	controllers installed on
Controller	Status
CH PRODUCTS IP DESKTOP CONTROLLER	OK
Add Remove	Properties
Advanced	Troubleshoot
	ОК

#### Configure keypad

For joysticks that come with a keypad, you can use the combination of a number assigned to a camera and the Enter key on keypad to quickly move to the camera's current view. The current view will be displayed in a single view. To configure the number representative of each camera, double-click to open a configuration window. The number used for quick switch must be mapped to an existing channel.

Also note the following:

- 1. The keypad key representative can be a 4-digit numeric combination.
- 2. If a number key is pressed without pressing the Enter key within 3 seconds, the command is cancelled.
- 3. You should have at least ONE EMPTY view cell.
- 4. A Rotation operation will be halted when using the keypad quick switch function.
- 5. This quick switch function does not take effect on the cameras managed by VAST substations.

South Contract Section 2015	d Mapping		×
Camera Name		Key Number	
FE8191-shepher	d test	1	
Mega-Pixel Netw	ork Camera	2	
IB8338-H		3	
SD8161		4	
	Sav	e Cla	ose

"9999" or sel	mber ric characters sta ect the number atwork Camera.	arting from "0" from the list to	to o map to
11		•	
		<u>О</u> К	<u>C</u> ancel

#### PTZ/ E-PTZ Function

In addition to using the PTZ control panel, you may also control the rotation handle of the joystick to remote control a PTZ/ E-PTZ network camera with ease.

<u>Pan/Tilt</u>: Move the rotation handle of the joystick; you can pan the camera to the desire position. There will be blue line displaying the moving direction in the center of the video image as the diagram 1 below.

<u>Zoom in/Zoom out</u>: Shift the rotation handle clockwise to zoom in the camera on an image or go counterclockwise to zoom out the camera on an image. There will be a circle and four vectors in the center of the video image as the diagram 2, 3 below.



Pan/Tilt (Move the rotating handle back and forth)



Zoom in (Turn the rotating handle clockwise)



Zoom out (Turn the rotating handle counter-clockwise)

#### **Proxy Settings**

In this section, you can enable, modify, or cancel **Proxy Settings** for client if your VAST Server is under a proxy. If you change the proxy settings, please fill in the new value next time you login the LiveClient next time.

💙 Proxy Setting	gs X
Enable Proxy	
Address:	
Port:	80
User Name:	
Password:	
	OK Cancel

🔮 VAST LiveClient 📧 🗷							
🔽 Log in local st	ation						
Address:	127.0.0.1						
Authentication:	Basic Account 🔹						
User Name:	admin						
Password:	•••••						
Port:	3454						
Proxy Settings							
Log in	Cancel Hide <<						

# How to Use PiP (Picture-in-Picture)

PiP (Picture-in-Picture) is an intuitive function for user to simultaneously view a Global View and ROI (Region of Interest) for live monitoring. The digital zoom in function can only focus on the interested area and represent the details of megapixel video. Moreover, the multi-touch mode is a very user-friendly interface for digital zoom in.

### Enable PiP

**Right-click** the video cell and select **Enable PiP**. If you want to disable PiP, click the option again to uncheck it. After you enable the PiP function, a movable global view window and a ROI frame will be displayed as shown below.



#### **Global View**

The global view is the original view with the size scaled down to 160x120. It is movable and you can drag it anywhere in the live view window. If you want to hide the global view, **right-click** the video cell and select **Hide Global View** from the menu. An icon (a) will appear on top of the live view window.



#### **ROI** (Region of Interest)

The ROI frame is capable of being resized and dragged in any direction upon the global view window as e-PTZ function.

#### Digital Zoom In

Through digital zoom in, the live view window will be filled with the zoomed in ROI image. The maximum magnification of the ROI frame is 16x zooming. The zoomed in area will change as the ROI frame is dragged and resized. You can also easily zoom in and zoom out the ROI frame by rolling the mouse back and force.

#### Snapshot & Print Zoomed In Image

You can snapshot and print the zoomed in image.

Edit	View	Configuration
Man	ually Begin	<u>R</u> ecording
<u>P</u> rin	oshot t ord to <u>E</u> XE	Ctrl+S
· ·	osh <u>o</u> t Zoome t Zoomed In	
Eind		

#### **PiP Settings**

The PiP Settings is for you to adjust the initial position of the global view window.

Click **Configuration > Client Settings > PiP Settings** to open the window. On top of it, you may choose the horizontal position with left / middle / right side of the live view window, or you can customize the percentage of space distance from the border of the live view window as an option. It is also fully applied for vertical position with top / middle / bottom side of the live view window. When it's done, you may click on **Apply to existing windows** to enable the settings.

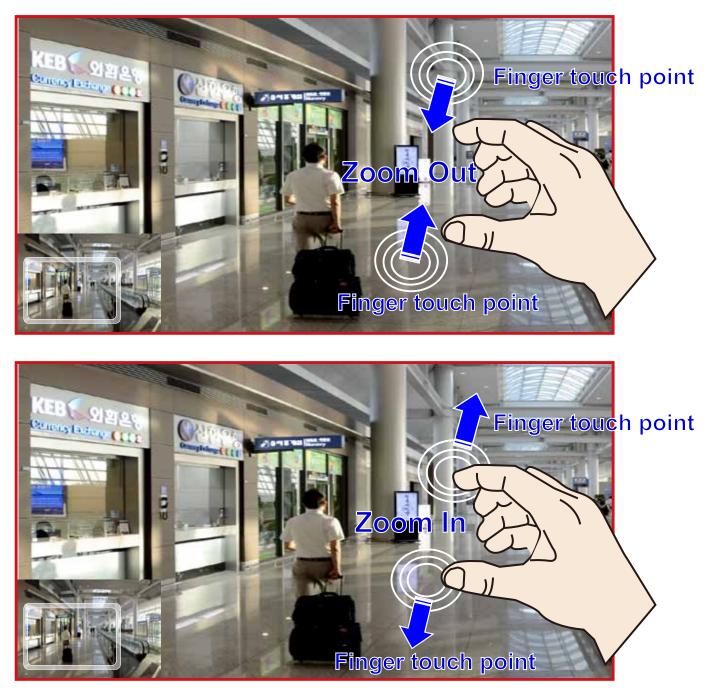
Configuration Layo	ut Help	🤜 PiP Settin	gs 🛛 🔀
<u>Camera Management</u> <u>Station Management</u> <u>U</u> ser Management <u>A</u> ssociation Management <u>E</u> vent Management <u>V</u> irtual Matrix Management Station Settings	<ul> <li>58.4</li> </ul>	<u>H</u> orizontal: <u>H</u> orizontal: <u>V</u> ertical:	Right Aligned       Yew Window         Right Aligned       Yew Window         0       Image: Second Se
Client Settings	Snapshot Settings		
<u>V</u> ideo Enhancement	<u>R</u> ecording Settings <u>V</u> iew Settings		
	<u>G</u> eneral Settings Joystick Settings <u>P</u> roxy Settings PiP Settings	L	<u>QK</u> <u>Cancel</u>

É

- If the position of ROI and global view will be saved and applied for the next open. It will be removed when the live view cell is removed.
- The PiP function is also applied in VAST Playback.

#### Multi-touch Mode

VAST also supports advanced multi-touch mode for PiP. You can easily zoom in or zoom out the image by touching the multi-touch monitor with two fingers.



# How to Configure Video Enhancement

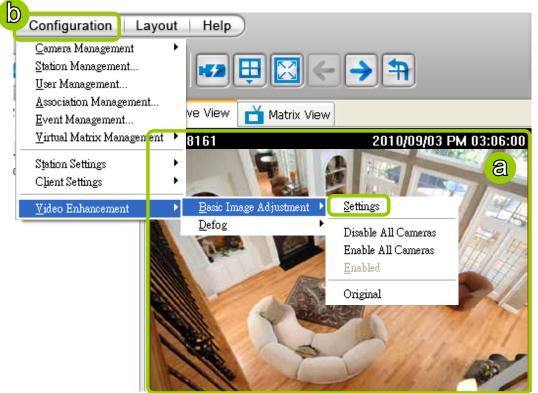
The LiveClient allows you to enable post-image enhancement and defog for video live view.

## **Basic Image Adjustment**

This function allows you to configure basic image adjustment including Brightness, Contrast, Saturation, and Hue.

Please follow the steps below to set a profile for post-image adjustment settings:

- a. Select the target video cell.
- b. Click Configuration > Video Enhancement > Basic Image Adjustment > Settings on the menu bar to open the Profile Settings window. (Or you can right-click the video cell and select Video Enhancement > Basic Image Adjustment > Settings from the popup menu.)

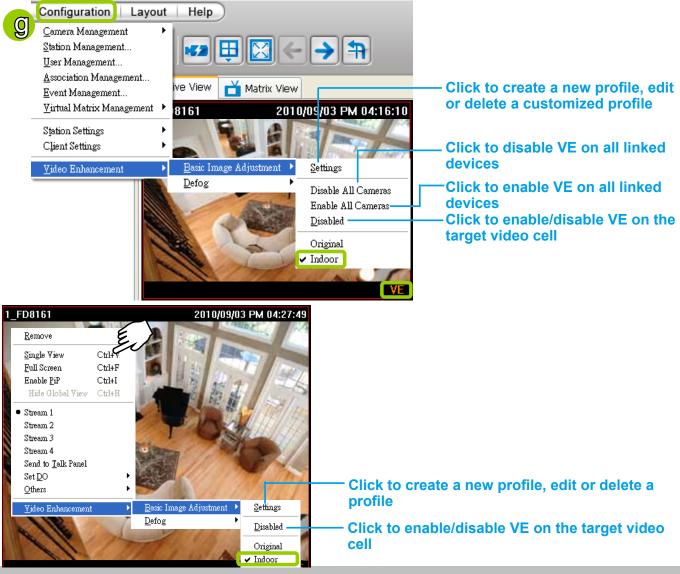




- c. Adjust the values of Brightness, Contrast, Saturation, and Hue. You can preview the image from the window on the right. A "VE (Video Enhancement)" text string will appear at the bottom right of the preview window.
- d. When completed, click **Save as Profile** and enter a name for the new profile.
- e. The new profile will be displayed on the drop-down list. This profile can be applied to all video cells.
- f. If you decide to apply the selected profile to the target video cell immediately, click the **OK** button. Otherwise, click **Cancel** to close the window.

	2	Basic Image A	djustment - for 1_1	D8161				×
		Current Profile:	Indoor Original	<b>~</b>	e			
	ſ	Profile Settings	Indoor					
C		Brightness:	-128	) 1:	28 27	Ŷ	1_FD8161 2010/09/03 PM 04:09:01	
		Contrast:	0 — 🕽 — — —	1	28 20	*	A A AL	
		Saturation:	0	12	28 20	•		
		Hue:	-180	10	80 0	•	VE	J
Q		Save <u>a</u> s Profile	. Update Profile	e <u>D</u> elete	Profile		Cancel	

g. Back to the main page, a "VE" text string will also appear at the bottom right of the video cell and the new profile will also appear and be selected on the popup menu as shown below.



## Defog

This function allows you to configure post-image defog.

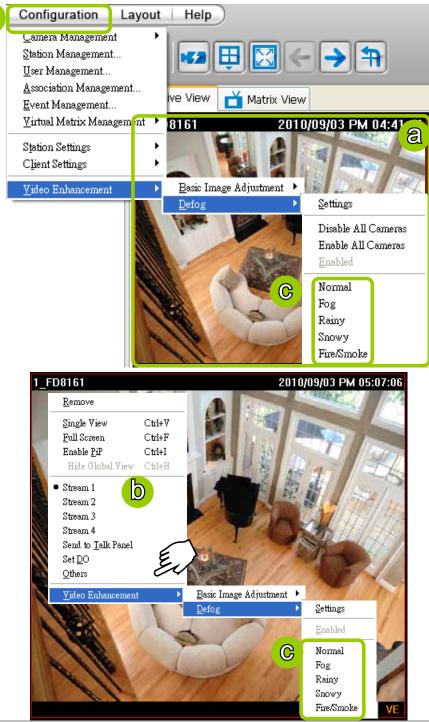
#### Apply a Preset Defog Profile

Please follow the steps below to set post-image defog settings:

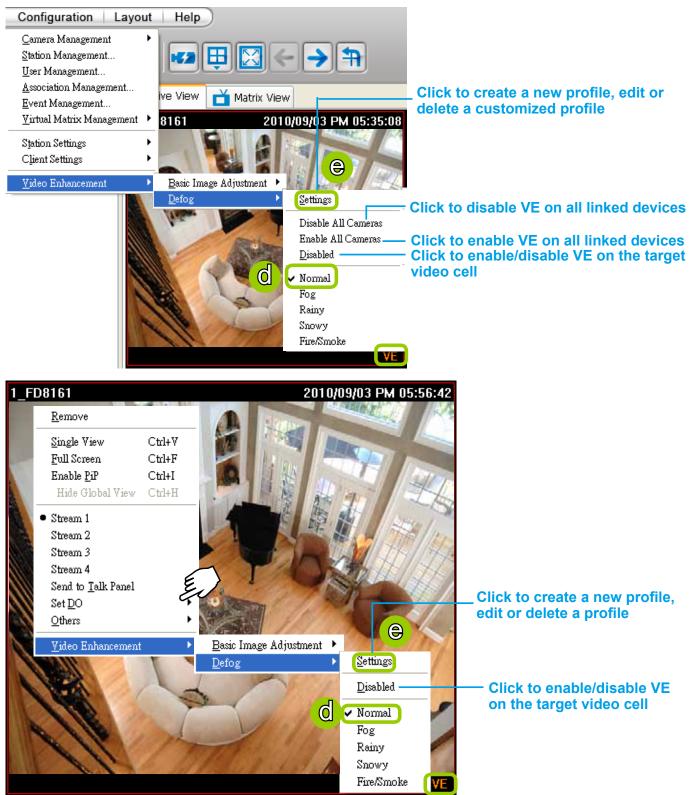
a. Select the target video cell.

6

- b. Click Configuration > Video Enhancement > Defog or right-click the video cell and select Video Enhancement > Defog.
- c. There are some preset profiles for you to apply to the target video cell. You can select one from the list accoding to the environment.



d. The string of the selected profile will be selected as shown below. A "VE" text string will also appear at the bottom right of the video cell.



#### Create a New Defog Profile

e. Click Settings on the popup menu to open the Profile Settings window.

	~	Defog Settings	- for 1_FD8161	×
		Current Profile:	Customize h	
	ſ	Profile Settings	Normal Fog Rainy	
f		Block Size:	Fire/Smoke 5 3 3 1 FD8161 2010/09/03 PM 06:07:45	
		Strength:	1 5 3 2	l
		Threshold:	0 255 130 🗘 VE	J
Q	]	Save <u>a</u> s Profile	Update Profile Delete Profile OK Cancel	

f. Adjust the values of Block Size, Strength, and Threshold. You can preview the image from the right window. A "VE (Video Enhancement)" text string will also appear at the bottom right of the preview window.

Block Size: Brush diameter from thick to thin (Value 1~5)

Strength: Brush stroke from soft to strong (Value 1~5)

Threshold: Brush pixel from loose to dense (Value 0~225)

- g. When completed, click **Save as Profile** and enter a name for the new profile.
- h. The new profile will be displayed on the drop-down list. This profile can be applied to all video cells.
- i. If you decide to apply the selected profile to the target video cell immediately, click the **OK** button. Otherwise, click **Cancel** to close the window.

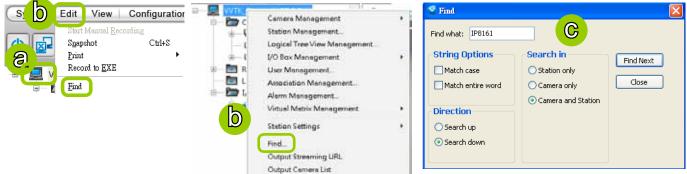
# How to Search for a Device on the Hierarchical Management Tree

This function allows you to conveniently search for an inserted device, which is useful when many devices have been inserted.

Please follow the steps below to find a device on the camera list:

a. Click the station on the hierarchical management tree.

b. Click Edit > Find on the menu bar (or right-click the station and click Find).



- c. The Find window will pop up for you to set your search criteria.
  - Find what: Enter a string in the blank. The string can be the full or partial name of the device you want to search for.
  - String Options: Match case represents that the search results should be identical to the string in lower-case or upper-case letters, the string can be part of a word. Match whole word means that the search results should be identical to the string for every character, and that the string should be a complete word or phrase. If you select both options, the search results should conform to all criteria listed above.
  - Direction: Select search up or search down.
  - Search in: Select search in station or camera.



d. Click Find Next, the seaching result will be marked as shown below.

	 VVTK_Station1(127.0.0.1)	🧟 Find		×
Search results	 Camera	Find what: IP8161  String Options Match case Match entire word  Direction Search up Search down	Search in Station only Camera only Camera and Station	Find Next Close

e. If there is nothing found in the camera list, a message will pop up as shown below:



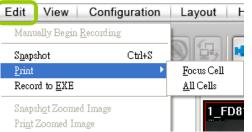
# How to Print a Video Image

There are two ways to print out an image of live video:

1. Select a video cell, then click **Print** and select **Print** from the popup menu. A Print window will pop up for you to choose the printer.

(127.0.0.1)	Live \		ew		
)8161(192.168.5.111) Storage	1_FD816	Remove Single View Full Screen Enable P/P Hids (Stabel View Enable Instart Replay Streem 2 (1380-720) Streem 2 (1380-720) Streem 3 (176:144) Streem 4 (1320-1000) Screem 4 (1320-1000) Screen 4 (1320-1000) Screen 4 (1320-1000)	834 834 834 834 834 834 834 834 834 834	2010/09/	102 PM 04:47:
		Others Video Enhanzement Video Display Node		Snapshot Record to EXE Print	Cbi+S
		SVC FPS Adjust Ber		Insuchot Zoomed Inc	0.0

- 2. You can also click **Edit > Print** to print out an image from a video.
  - Focus Cell: Print out an image of the target video.
  - All Cells: Print out an image with all video cells in the monitoring window.



## How to Lock LiveClient for Security Concerns

If you are away from your computer, for security reasons, we suggest you lock the program. When LiveClient is locked, the user must fill in the correct password to unlock and access the program again.

- To lock LiveClient, click Unlock on the quick access bar or click System > Lock on the system menu. The Unlock icon will then turn into Lock .
- To unlock LiveClient, fill in the correct password in the popup window.

System Edit View	😴 Input 🔀
Loc <u>k</u> Ctrl+L Enable Click On Image Language	The application is locked. Please enter the password for STAdmin.           ****
Second <u>V</u> iew <u>E</u> -Map	<u>QK</u> <u>Cancel</u>
Launch <u>P</u> layback	
Logou <u>t</u> E <u>x</u> it	

# How to Log out from the VAST Server

To logout from the current server, click **Logout** on the quick access bar or click **System > Logout** on the menu bar. A confirmation window will pop up. Click **OK** to confirm or **Cancel** to return to the VAST LiveClient window.

System Edit View	Confirm 🛛
Loc <u>k</u> Ctrl+L Enable Click On <u>I</u> mage	This will terminate the current connection. Are you sure you want to continue?
Language	
Second <u>V</u> iew	
<u>E</u> -Map	
Launch <u>P</u> layback	
Logou <u>t</u> E <u>x</u> it	

## How to Exit VAST LiveClient

To exit VAST LiveClient, click **Exit** on the quick access bar or click **System > Exit** on the menu bar. A confirmation window will pop up. Click **OK** to confirm or **Cancel** to return to the VAST LiveClient window. When you exit the program, your user account will be automatically logged out from the current server.

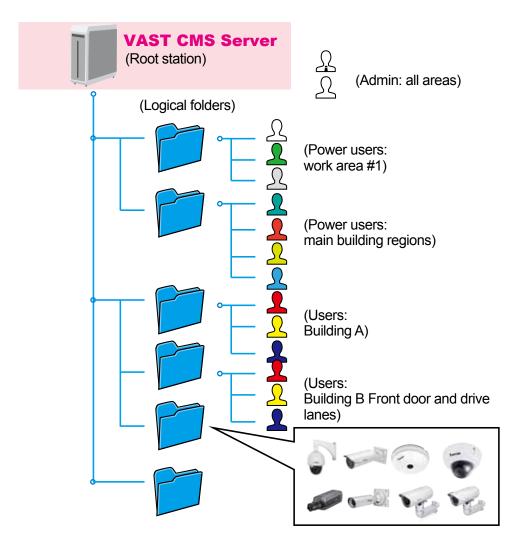
oaram?

System Edit V	/iew	<b>S</b> C	Confirm
Loc <u>k</u> Enable Click On Image Language	Ctrl+L	4	Are you sure you want to exit the pro
Second <u>V</u> iew <u>E</u> -Map Launch <u>P</u> layback Logou <u>t</u> E <u>x</u> it			

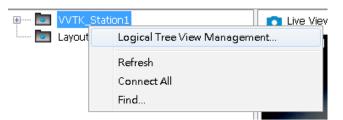
# How to Configure a Logical Tree

A Logical Tree view is available since rev. 1.10 for both LiveClient and Playback. The Logical Tree view allows you to re-define the logical relationships between the real-world 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 re-arrange your cameras and devices on a tree view that is geographically accurate.

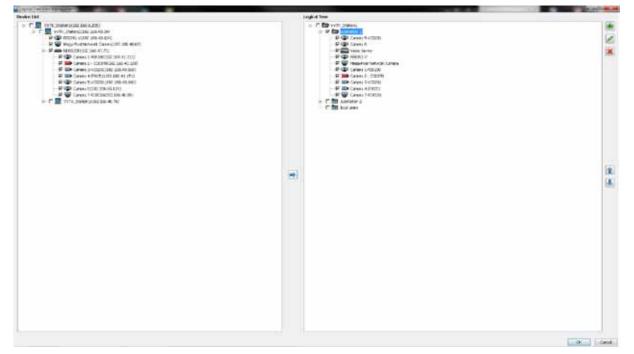
In addition to this, the logical folders can also be used to create privilege groups for users with different access rights. This enables an administrator to easily and flexibly align user privileges with his camera deployments.



To configure a Logical Tree, either right-click on the Device list root entry (VVTK\_Station1), or visit the top menus through **Configuration** > **Logical Tree View management**.



You will then enter the **Logical Tree View** management window. Left click on the root directory, and then right-click to display the **Add** command.



A Logical tree can also display and include the cameras from VAST substations. To enable connection with substations, make sure the **Relay Settings** is enabled both on the VAST Root and substations.

💙 LiveClient			
System Edit View	Configuration Layout Help		
VVTK_Station1(19	Camera Management Station Management Logical Tree View Management I/O Box Management User Management Association Management Alarm Management Virtual Matrix Management Search VivoCam Switches	<ul> <li>▶ IN PARTY IN THE PARTY INTERPARTY INTERPA</li></ul>	99:0
🗄 🔤 Camera	Station Settings	<ul> <li>General Settings</li> </ul>	
Recordi	Client Settings	<ul> <li>Network Settings</li> </ul>	
	192.168.40.75) tion1(192.168.40.7£	Recording Storage Settings Recording Schedule Settings Scheduled Backup Settings Server Settings Relay Settings	•

🛛 Relay Settings		
Allow CMS connection		
Relay Authentication		
Password:		
Confirm Password:		
OK Cancel		

To create a logical folder, enter a name for the sub-directory. The name can be a geographical indicator or whatever name your prefer; such as Building A, Site 1, etc. Add a short description.

💙 Add New I	Folder
Name:	
Description:	
	OK Cancel

You can also create logical folders under sub-directories, e.g., a "Corridor" under "Building A." Do this by selecting a sub-directory with a left-click and then right-click on it.

Logical Tree	
□ □····□ ► VVTK_S	
	Add
	Edit

Note that the root directory can not be edit.

You may also left-click to select a sub-directory, and use the **Add**, **Edit**, and **Delete** buttons to create, edit, or remove sub-directories. Use the arrow buttons to change the positions of sub-directories or devices on the logical tree.

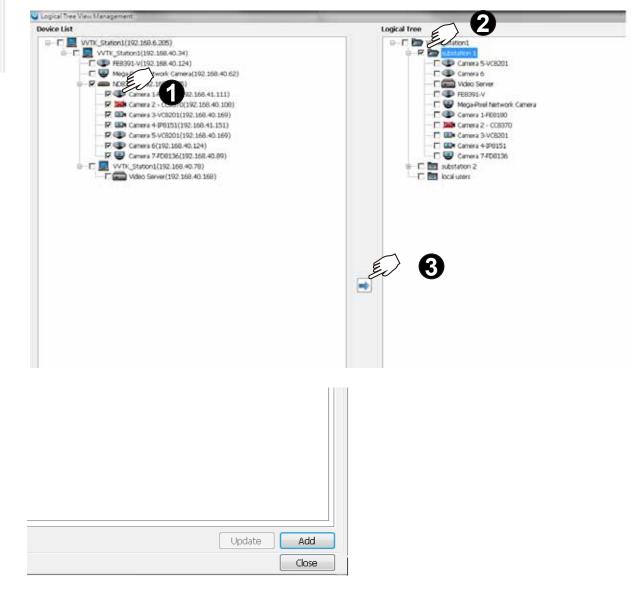


When done, click the **OK** button at the low right corner of the window. Configuratio changes will be preserved.

You should then insert cameras to a preferred directory:

- 1. Open the device tree to select camera. Left-click to select the checkboxes in front of cameras.
- 2. Select the checkbox of a preferred sub-directory. Make sure the checkbox is selected and the directory is highlighted.
- 3. Click the **Move** button in the middle of the screen.

Cameras will be listed under the target sub-directories.



Use the Sort and Find functions on the Device List on the left panel if it is hard to locate a device.

When done with the configuration, click the OK button, and select from the top menus **View** > **Logical Tree View**. The Logical Tree View will become the standard display for your VAST configuration.

LiveClient				
System   Edit	Vie	w Configuration	Layout	Help
0	✓	Logical Tree View Device Tree View		
D D- VVTK_Sta	✓ ✓	PTZ Panel Two Way Audio Panel Instant Playback Panel		/iew cel Net
📴 Site	✓	Alarm Window		
		Full Screen Minimize	Ctrl+F	1
Layout	<ul> <li>Image: A start of the start of</li></ul>	MatrixView		

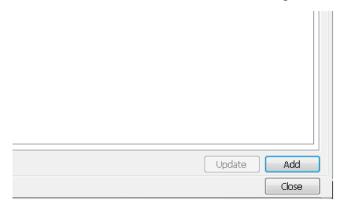
When done with the creation of logical folders, you can move to the **User Management** window. You can then define users' access rights using the logical folders you created. For example, you may let a user access a specific logical folder while forbidding him from the others.

- 1. When you assign Accessible Devices for a user, select the **Logical tree** button on the lower right.
- 2. Select the "**Selected logical tree nodes**" button. You can then select or deselect logical folders to confine the accessible devices for a user.

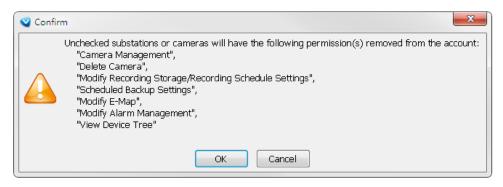
Note that an administrator has access to all devices, and hence the selection is not available for an administrator.

Iser List	Account Management
WIK_Station1	
- P Administrator	Authentication: Basic Account •
wvotek.twijerf.hu wvotek.twijerf.huang wvotek.twijfank.chang wvotek.twijfank.chang	User Name: Test1
vivotek.tw/frank.chang vivotek.tw/kate.wang	Password: •
at a status	Confirm Password: •
Power User	User Role: Power User
	El Copy From: Test
	Accessible Device: C Device tree  Logical tree
	Permission Accessible Logical Tree
	C All logical tree . Selected logical rendes
	Image: Station 1       Image: Station 1         Image: Station 2       Image: Station 2         Image: Station 2       Image: Station 2         Image: Image: Station 2       Image: Station 2         Image: Image: Image: Station 2       Image: Station 2         Image: Image: Image: Image: Station 2       Image: Image: Station 2         Image: Image

3. Click the Add button on the lower right.



4. The User account information will prompt. Click **OK** to proceed.



5. You can repeat the above steps to create more user accounts using the limited access configuration via the use of logical folders.



- The Refresh, Camera Settings, Output Streaming URL, Send to Talk Panel commands are available for cameras listed in the Logical Tree View.
- The DI/DO, Recording Storage, and I/O Box are not available on a Logical Tree View.
- The root directory (default VVTK\_Station1) can not be edited or removed.
- A camera can be added to different sub-directories; however, it can not be added twice into the same sub-directory.
- A camera managed by a sub-station can be added into the Logical Tree.
- The Logical Tree View can not be edited through a web console with the VAST server.
- Cameras added to the VAST configuration will not be automatically added to the Logical Tree View.
- By default, only the administrator and power user are authorized to configure the Logical Tree View.

# VAST Playback Configuration

## Activating VAST Playback and Logging in to a Server

VAST Playback allows you to search and playback recorded media data from VAST Server.

Once you insert a device into the hierarchical management tree of VAST LiveClient, it will automatically be displayed on the hierarchical management tree of VAST Playback. You can then begin to use VAST Playback to view recorded or backup video clips.

After installing the VAST Playback program, please follow the steps below to activate VAST Playback:

- 1. Run the VAST Playback program. If you have already run VAST LiveClient, you can also click System > Launch Playback to activate VAST Playback.
- 2. A Login window will pop up. Fill in the information as shown below:
  - If you want to login to a remote VAST Server, enter the IP address, user name, password and communication port of the server. Click Log in to login the target server or Cancel to exit the system.
  - If you want to login to your local host which is running VAST Server, check the Login local station checkbox, and the local IP Address will be displayed automatically. Enter the User Name, Password, and Communication Port of the local server to log in. Click Login to log in to the target server or Cancel to exit the system.

📎 VAST Playbac	k 🖻 💌
🗖 Log in local sta	ation
Address:	192.168.6.135 🗸
Authentication:	Basic Account 👻
User Name:	admin
Password:	•
Log in	Cancel More >>

	🔮 VAST Playback 💷 💌	
ľ	🗹 Log in local sta	ation
	Addres.	127.0.0.1
	Authentication:	Basic Account 🔹
	User Name:	admin
	Password:	•
	Log in	Cancel More >>

3. The VAST Playback main window will be displayed.



If your network environment need to set up proxy, click More >> to extend the login window, then click Proxy Setting to open the dialog. Then enter related information to link to your proxy server.

💊 VAST Playback		
🗖 Log in local st	ation	
Address:	-	
Authentication:	Basic Account	
User Name:		
Password:		
Port:	3454	
Proxy Settings	Working Offline	
Log in	Cancel Hide <<	

📎 Proxy Settings			×
🔽 Enable Proxy			
Address:			
Port:	80	* *	
User Name:			
Password:			
		OK	Cancel

Available functions of the VAST Playback program will be enabled according to the role of your login account. For more details about the privileges of the user account, please refer to How to Manage User Accounts on page 129.

# VAST Playback User Interface

	D annual 14 kg for	RANNERS REAL BOOM
Even     Conset     Conset		<b>EVIVOTEK</b>
	<b>VIVOTEK</b>	<b>Evivotek</b>
	ngeforfendeta, zi-trainen zintekziztin etta ineriten	

A. Menu bar
 B. Quick access bar
 C. Query panel (Browsing / Time search / Bookmark search / Event search / Alarm search / Log viewer)
 D. Status panel
 E. Recorded video playback window
 F. Playback control panel
 G. Video clips list

#### Menu Bar

System	Edit View Configuration Layout Help		
Menu Item	Drop-down Options		
System	Lock / Language / Launch LiveClient / Logout / Exit		
Edit	Snapshot / Print / Snapshot zoomed image / Print zoomed image / Find		
View	Logical Tree View / Device Tree View / Backup Status /Exporting Status / Browsing / Time Search / Event Search / Bookmark search / Alarm search / Log Viewer / Full Screen / Minimize / Query Panel / Video Clips List		
Configuration	Client Settings (Snapshot Settings / Export Settings / View Settings / Proxy Settings / General Settings / PiP Settings)		
Layout	Change Layout		
Help	About		

### **Status Panel**

User Name: admin Station Name: VVTK_Station1	CPU 35 %
Login Time: 2014-04-22 10:23:09	Memory
Current Time: 2014-04-22 11:14:54	61 %

- · · · · · · · · · · · · · · · · · · ·
Station Name (IP Address)
Login Time (yyyy-mm-dd hh:mm:ss)
Current Time (yyyy-mm-dd hh:mm:ss)
CPU and memory usage in percentage

### **Quick Access Bar**



lcon	Function	Description
٢	Exit	Exit the system
	Logout	Logout from the current station
	Lock	Click to Lock the system for security concerns ( Click the system)
	Volume	Adjust the audio volume of the target video (
	Snapshot	Capture the picture of the target video
e	Print	Print out the picture of the target video
#	SVC Level	Exert SVC control of video playback frame rate
152	Remove All Connection	Remove all live videos from the live video monitoring window
₿	Layout	Change the layout of video monitoring window
	Full Screen	Maximize the live video monitoring window
8,	Switch Screen	Switch to another screen
tð	Synchronous Playback	Click to enable synchronous playback for multiple channels

E

Some buttons will be disabled if the selected device does not support those functions.

## **Recorded Video Playback Window**

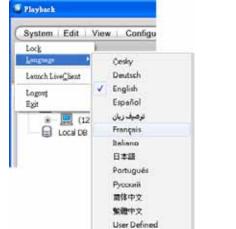
The "VIVOTEK" logo indicates that no camera has been assigned to the video cell.

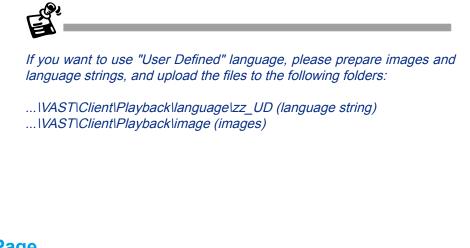


The red frame ( ) represents the focused cell.

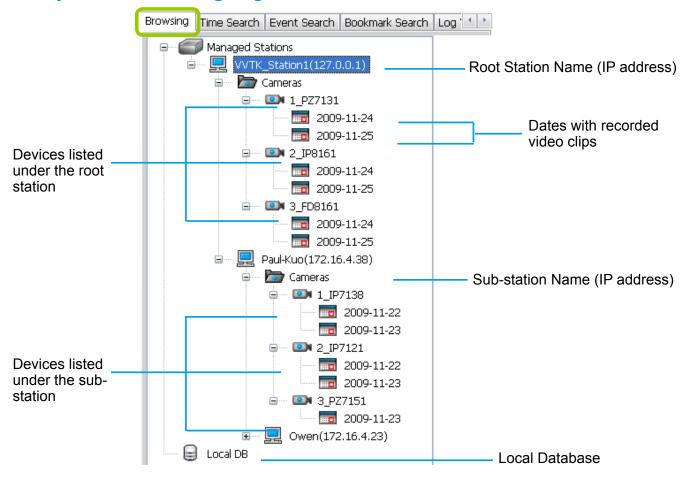
## Language Selection

VAST current supports user interfaces in multiple languages; and language options are availabe in: English, Deutsch, Español, Français, Italiano, 日本語, Português, 簡体中文, and 繁體中文. If you want to select another language for the interface, please click **System > Language** on the menu bar to select a desired language. Please note that if you want to change the language option, a message will remind you to restart the system.





# **Query Panel-- Browsing Page**



You can hide this panel in order to maximize the single playback view from the **View** menu.

lcon	Description
	Station list including server and local database
	A station (a computer that has installed VAST Server)
	A station (a computer that has installed ST7501 Server)
	The camera that exists on the hierarchical management tree of LiveClient.
	The camera that has been removed from the hierarchical management tree of LiveClient (off-line). However, its recorded video (if any) is still accessible from the server.
	Dates with recorded video clips.
	Local database for backup data. For more information about how to upload backup data to the list, please refer to page 263.
_	



See page 231 for how to configure a Logical Tree View.

Browsing	Time Search Event 9	earch Bookmarl	k Search   Log 🛀	
	VVTK_Station1(127.	4.38)		<ul> <li>Select station(s)/ device(s) that you want to search for recorded files</li> </ul>
Time Z	one: GMT+08:00 E	eijing, Chonggir	ng, Hong k 🔽	
Star	t Time:			
2009/:	11/23 🔽 08:50	:15 😂 🚃		
<b>End</b>	Time: 11/26 💉 09:50	:15		 Specify search period of time
			Search -	 Click to start to search, the results will be shown on the video clips list

# **Query Panel--Time Search Page**

You can hide this panel in order to maximize the single playback view from the **View** menu.

The **Time Zone** setting is automatically synchronized with that on your client computer.

# **Query Panel--Event Search Page**

Browsing Time Search Event Search Bookmark Searc	
Browsing Time Search Event Search Bookmark Search	Select station(s)/ device(s) that you want to search for recorded files
4 III >>>	
Search Categories: All Events 👻	Select an Event Category
Motion - Window 1         Motion - Window 2         Motion - Window 3         Motion - Window 4         Motion - Window 5         IVA - Moving Object         IVA - Loiterina Detection	Click to add search criteria
Add Remove	Click to remove search criteria
Time Zone: GMT+08:00 Beijing, Chongging, Hong Kor ▼ ✓ Start Time: 2014/ 6/ 5 ▼ 15:49:42 € End Time:	<ul> <li>Specify search period of time</li> </ul>
2014/ 6/ 5 ▼ 16:49:42 ↓       Display in New Result List         Search	Click to start to search, the results will be shown on the video clips list

# Query Panel--Bookmark Search Page

Browsing   Time Search   Event Search   Bookma	ark Search 🛛 🗛 arm Search	1
WTK_Station 1(127.0.0.1) Cameras  Mega-Pixel Network Camera		Select station(s) that you want to search for bookmarks
Bookmark Name:		Select a name to serach for
Time Zone: GMT+08:00 Beijing, Chongging, H	iong Kong, Kuala l 💌	Select a time zone
8/ 1/2012 ▼ 14:52:56 ▼ End Time: 8/ 1/2012 ▼ 15:52:56 ▼		Specify search period of time
	Search	Click to start to search, the results will be listed on the video clips list

# **Query Panel--Alarm Search Page**

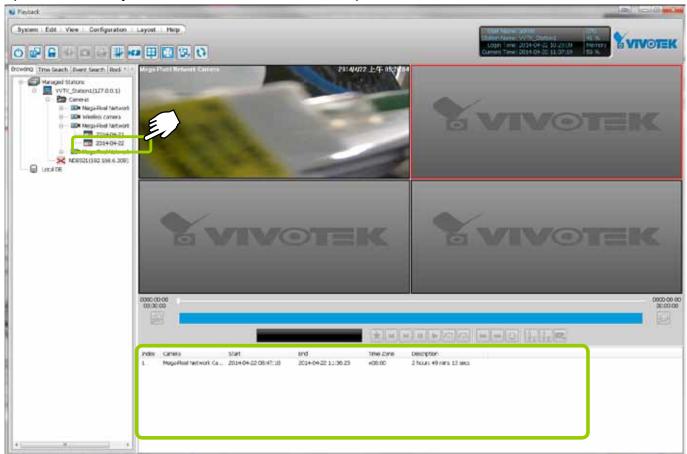
Event Search Bookmark Search Alarm Search Log v 💶	
📃 VVTK_Station1(127.0.0.1)	Select station(s) that you want
	to search for bookmarks
Condition	Click to configure the search conditions
Time Zone: GMT+08:00 Beijing, Chongging, Hong Kc 💌	Select a time zone
Start Time:	
2014/ 9/25 👻 13:55:21 🚔	
End Time:	Specify search period of time
2014/ 9/25 👻 14:55:21 👗	
Search	Click to start to search, the
	results will be listed on the video clips list

# Query Panel--Log Viewer Page

Bookmark Search	Alarm Search	Log Viewer		7	
	Station1(127. aul-Kuo(172.1				Select station(s) that you want to search for recorded logs
Category:	All Local Log	5	~		Select a Log Category
User:			*		- Select a User Account
Result:	All		~		<ul> <li>Select a Result Type</li> </ul>
Log Type:	All		~		- Select a Log Type
Log Level:	All		~		- Select a Log Level
			above level		
Time Zone: GMT· ☑ Start Time:		), Chongging,	Hong k 🔽		
2009/11/26 💌	08:50:16	\$			
End Time:	00,50,16	~			— Specify search period of time
2009/11/26 💌	09:50:16	*			
			Search -		Click to start to search, the results will be listed on the video clips list

## **Video Clips List Window**

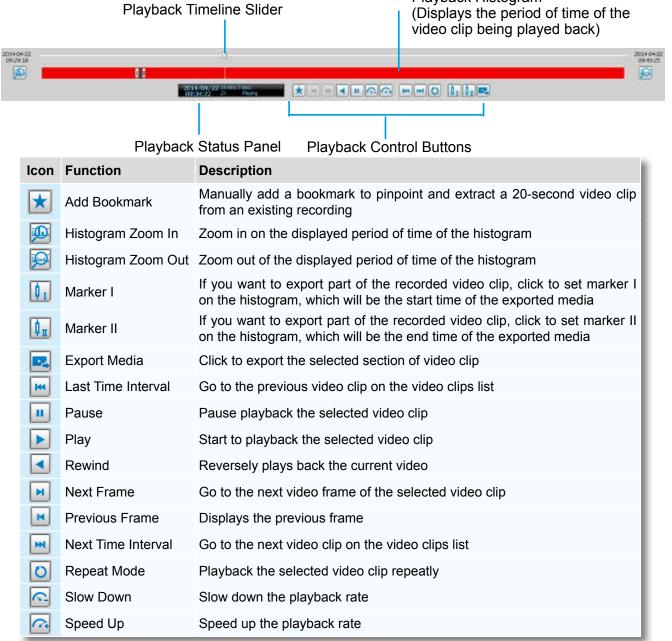
If you select an **option "date"**, the video clips will be displayed in the video clips list window. An option "date" may contain more than one video clip.

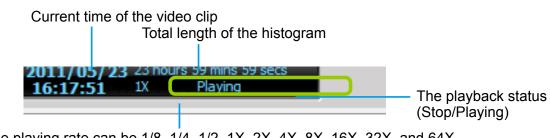


You can hide this panel in order to maximize the single playback view from the View menu.

## Playback Control Panel

When you double-click a video clip to play, the playback control panel will be enabled for you to use. Playback Histogram





The playing rate can be 1/8, 1/4, 1/2, 1X, 2X, 4X, 8X, 16X, 32X, and 64X.

#### Rewind

The Rewind function enables users to reversely playback from a specific point in time on a video playback window. Once the occurrence of an event is ensured, this function can facilitate the process of finding the evidences that appeared before the occurrence.

The Rewind function also applies to the Synchronous Playback mode. The following also apply:

- 1. The maximum playback speed is 64x. (I-frame only when speed is higher than 16x)
- 2. When you pull the time slider during the Rewind playback, short interruptions may occur.
- 3. When switching from the playback mode to the Rewind playback, the playback speed remains the same. The same applies when switching from Rewind to the playback mode.

#### Limitations:

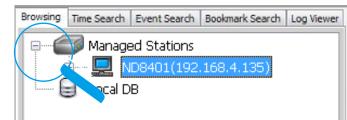
- 1. Short delays may occur when switching from playback to rewind, due to limitations by the hard disk access speed and network speed.
- 2. When doing the forward playback, the previous frame function is not available. When doing the rewind playback, the next frame function is not available.
- 3. The Rewind playback on multiple streams requires system performance resources.

# How to Playback Recorded Video

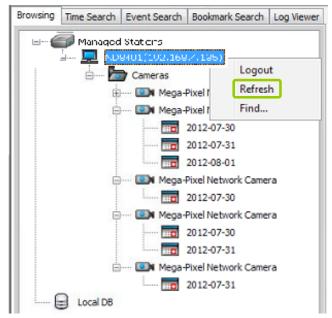
## Select a Recorded Video Clip

Please follow the steps below to select a video clip:

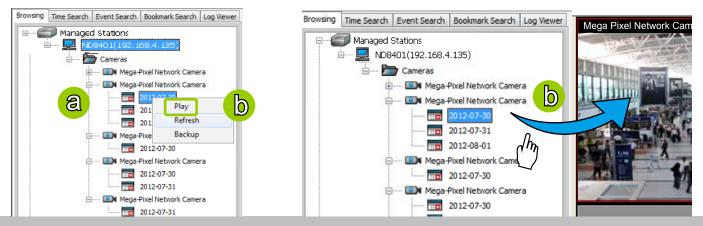
1. On the **Bowsing** page, click the plus sign (+) to expand the hierarchical management tree.



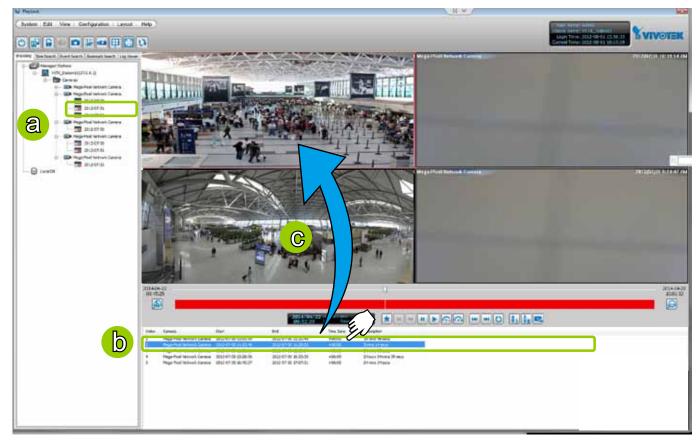
2. **Right-click** a station, device, or option "date" on the hierarchical management tree and click **Refresh** to display the recorded video clips.



- 3. There are two ways to view the video clips of a date.
  - View all video clips of a date:
    - a. Select a **opti**on "date" from the hierarchical management tree.
    - b. Double-click the option "date" or right-click the option "date" and click play, and it will start to play in an available video cell. (You can also directly drag-and-drop the option "date" to a desired video cell in the recorded video playback window. The video clip will start to play.)



- View only one of the video clips of a date:
  - a. Click on a "date" on the hierarchical management tree. The corresponding video clips will be listed in the video clip list window.
  - b. Select a video clip from the video clip list window.
  - c. **Double-click** the video clip, then it will start to play in an available video cell. (You can also directly **drag-and-drop** the video clip to a desired video cell in the recorded video playback window. The video clip will start to play.)

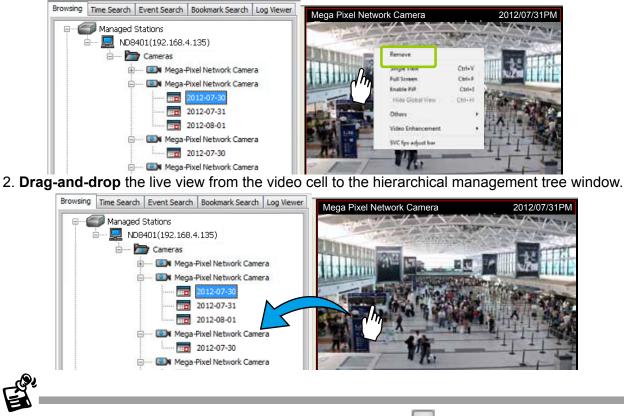


4. Then you can make use of the playback control panel to playback the selected video clip. Please refer to **Playback Control Panel** on page 249.

# **Remove Recorded Video Clips from Video Cells**

There are two ways to remove a recorded video clip from the video cell:

1. Right-click the video cell and select Remove.

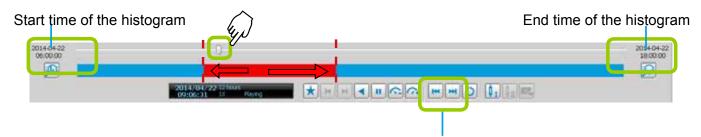


If you want to remove all live videos from the video cells, please click 💶 on the menu bar.



# Timeline Slider Bar and Histogram

The red part of the histogram shows the period of time of a video clip. The timeline slider bar will move forward as the video is on playback. You can manually move forward/backward the **Timeline Slider Bar** to the desired position as shown below.



The current time of the video clip will be displayed on the status panel. It will change according to the current position of the timeline slider bar.

# Zoom in / out of the Histogram Histogram zoomed in Total time length

As the second picture shows, by clicking **Histogram Zoom In**, the total time of the histogram will shorten to half of the original period of time, while the red part of the histogram that shows the period of time of the video clip will extend to twice the original time span.

In addition to clicking we and so to zoom in/ out of the histogram, you can use the mouse directly to drag the histogram to zoom in part of the focused video clip. For example:

a. Drag a section of the histogram. You can drag it to either direction.



b. The section will be extended as shown below.





For more functions of the playback control buttons, please refer to page 249 for detailed description.

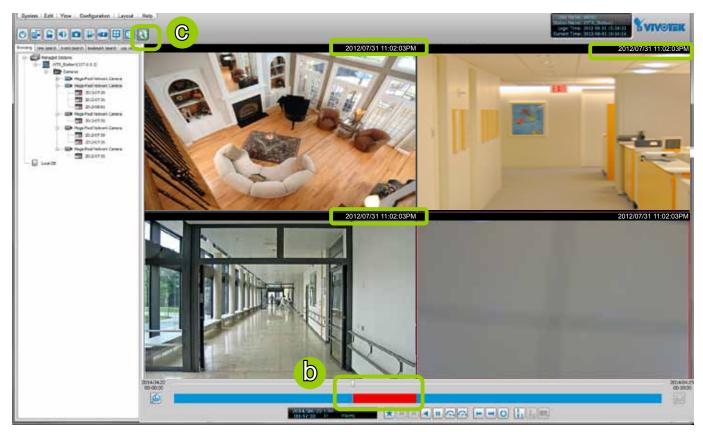
## Synchronous Playback

VIVOTEK VAST Playback supports synchronous playback, which allows you to review up to 16-channel video clips simultaneously during the specific time point. Please follow the steps below to enable synchronous playback:

a. Drag-and-drop the option "date"s to the video cells.



- b. Drag the Timeline Slider Bar to the specific time point.
- c. Click the synchronous playback button 🔝 on the quick access bar. The selected channel will start to sychronously playback as shown below.



- d. You can move forward/backward the Timeline Slider Bar to another time point, and all of the time stamps on the video cells will change accordingly.
- e. If you want to stop synchronous playback, click the non-synchronous playback button 💽 again.



The following illustration shows that during the specific time, there is no recorded video on the camera.

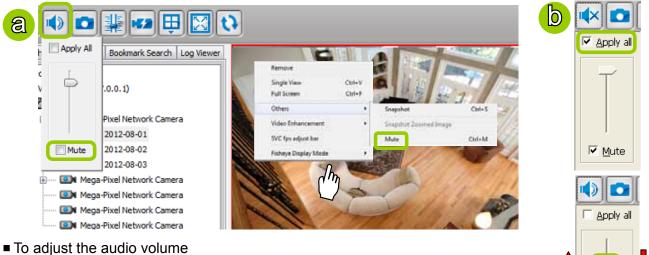


# **Audio Control**

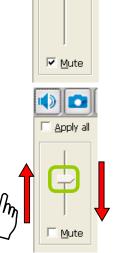


The audio function will be enabled if the device is equipped with an internal or external microphone. Please follow the steps below to adjust the volume or turn on/off the audio of the focused video:

- To turn off the audio (Mute Mode)
  - a. Click Audio On 🚺 on the quick access bar and check Mute. Or you can right-click on the video cell to open the popup menu, then click Others > Mute. The mute option in the popup menu will then be selected.
  - b. If you want to turn off the audio of all live video, select Apply all.
  - c. The Audio icon will then change from 🚺 to 💌.



- a. Click Audio On 💿 on the quick access bar.
- b. Drag-and-drop the slider bar. Slide to a higher position for louder volume.



- To turn on the audio
  - a. Click Mute Mon the quick access bar and uncheck Mute. Or you can right-click on the video cell to open the popup menu, then click Others > Mute. The mute option in the popup menu will then be unchecked.
  - b. If you want to turn on the audio of all live video, select Apply all.
  - c. The Audio icon will then change from 🚺 to 🚺.



# How to Change the Playback Layout

## Changing the Layout of the Recorded Video Playback Window

VIVOTEK VAST Playback supports up to 16-CH simultaneous recorded video playback on a single monitor and allows you to change the layout of the recorded live video playback window based on the number of inserted devices.

#### Switch Video Channels

Drag-and-drop a video channel to another empty video window.

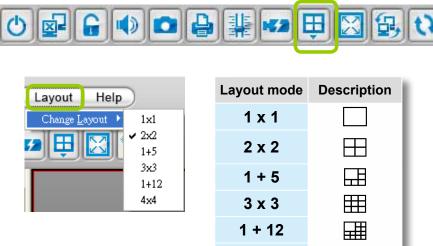


To switch two channels, **drag-and-drop** one view to the other, then the two channels will switch positions.



#### **Configure Layout Mode**

Click the **Layout** button 🖳 on the quick access bar or click **Layout > Change Layout** on the menu bar. Select a desired layout mode and the layout window will change accordingly. Below we illustrate 6 types of layout modes:



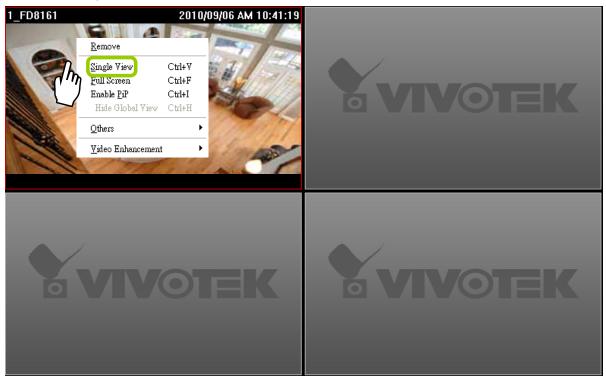
4 x 4

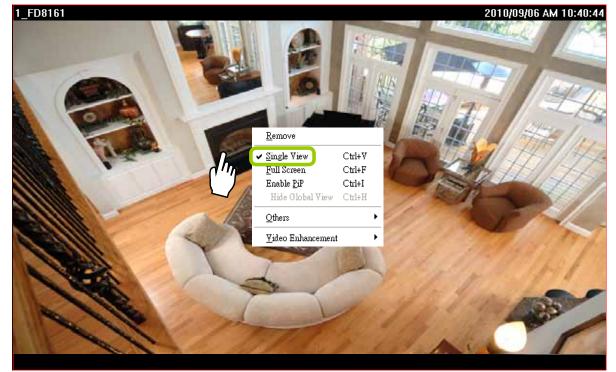
Ħ

# Maximize/Minimize the Recorded Video Playback Window

• Single View: to maxmize a video cell to the entire video playback window

**Double-click** the video cell, or **right-click** the video cell and selec **Single View**. The focused video will occupy the entire Playback window as shown below.





To restore to the original layout, **double-click** the video cell or **right-click** the video cell and uncheck **Single View.** 

Full Screen: to maxmize the video playback window to the entire screen

Click **Full Screen** on the quick access bar or **right-click** the video cell and select **Full Screen**. In addition, you can also click **View > Full Screen** on the menu bar to maximize the recorded video playback window.



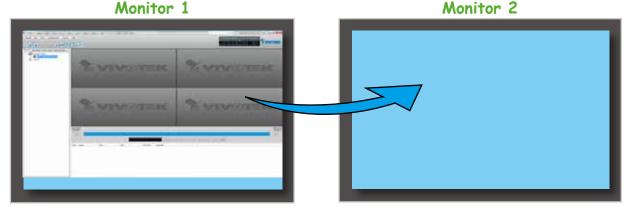
To restore to the original layout, **right-click** the video cell and uncheck **Full Screen**. You also can press the **Esc** button on the keyboard to leave the full screen mode.

Minimize: If you click View > Minimize on the menu bar, the Playback window will minimize to the Windows tool bar.

#### **View Recorded Video with Multiple Monitors**

If you have multiple screens in your control center, you can switch the VAST Playback Window among these screens.

If you have two monitors, click Switch Screen so on the menu bar, the Playback window of monitor 1 will switch to monitor 2.



If you have three or more monitors, a drop-down list will be displayed when you click Switch Screen on the menu bar. The number of options on this list depends on the number of your screens. Select a desired screen from the drop-down list and the Playback Window will then switch to the specified screen.



# How to Backup Recorded Video

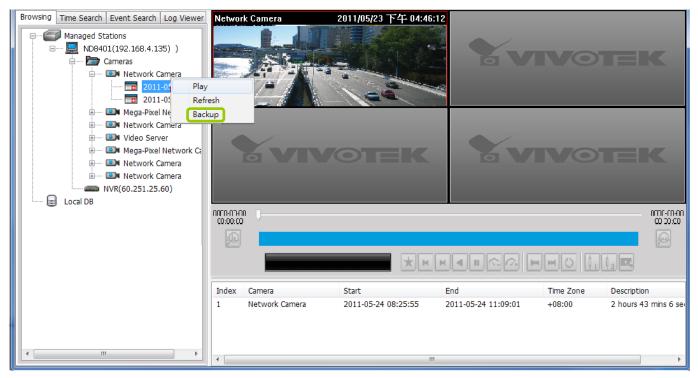
In addition to the Schedule Backup function of VAST LiveClient introduced on page 61, the VAST Playback also features to backup recorded video clips from the **local database**. Please open the **Browsing** page and follow the steps below to backup recorded video:

a. Select the target files.

• <u>To backup all recorded video of a selected device</u>: **Right-click** the device and click **Backup**.

System Edit View Configuration			Login Future: 1 Station Future: VVTX_Stat Login Time: 2011-05-2 Current Time: 2011-05-2	4 11:06:23 4 11:40:04	VIVOTEK
The Starth   Event Starth   Soleward Starth   Lag Yeer Weaper Starts HORNO(122, 168:4, 125) Comme	and the second se	2011加5/23 下午 04:4		170	TEK
De Tropa Prod Technolt Cenera Die Hope Prod Technolt Cenera Die Hope Prod Technolt Cenera Die Hope Prod Technolt Cenera Die Loss ID	Svn	otek	**	IVG	TEK
			neniaal	FR 0 (	
	andex Camera 1 Network Camera	Start 2011-05-24 08:29:55	End 2011-05-24 11:09:01	Time Zone +08:00	Description 2 hours 43 mins 6 se
al					,

To backup all recorded video of the day: Right-click the option "date" and click Backup (or select the date and click the Backup button below).



To backup part of the recorded video of the day: Select the date and choose the video clip(s) from video clip window. Then right-click the selected option(s) and click Backup. Note: Use the combination of the Shift key and left mouse click to select multiple video clips.

System Edit View Configuration Lay		John Marcel 1714 - 11 John Marcel WTC Served Logit Time 2009-11-2710 Current Time 2009-11-2710	
Write         Time Search         Event Search         Log Waves           Image: Staton         Image: Staton         Image: Staton         Image: Staton           Image: Staton         Image	<b>X</b> VIVOT	K YV	VOTEK
CAN CONSTRAINED     CONST	*vivor	K TV	Votek
l Local De		elelelelelele	
	Index Camers (24ar) 1 1,177131 2005 11 25 32 54 04 2 1,077131 2005 11 25 32 54 04 3 1,077131 2005 11 25 32 54 04 3 1,077131 2005 11 25 37 52 50	End Time Beiling 115 4000 105 4000 1000 Million 11 5/99 4000	0 47 mile 25 secs 0 2 hours 10 miles 1 per

b. A **Backup Settings** window will pop up. Specify the time span and select a storage path, then click **Backup**. The system will start to backup and popup a window showing the backup status.

Backup Settings	Backup Status
Start Time: 1/16/2013 ▼ 00:00:00 ↓ End Time: 1/16/2013 ▼ 23:59:59 ↓	Mega-Pixel Network Camera 2013-01-16 00:00:00 ~ 2013-01-16 22:59:59 Backup Mega-Pixel Network Camera has completed.
Save to: E:\Recording\2013-01-16\3	
Backup Cancel	

If you close the status window, you can also open it again by clicking **View > Backup Status**.



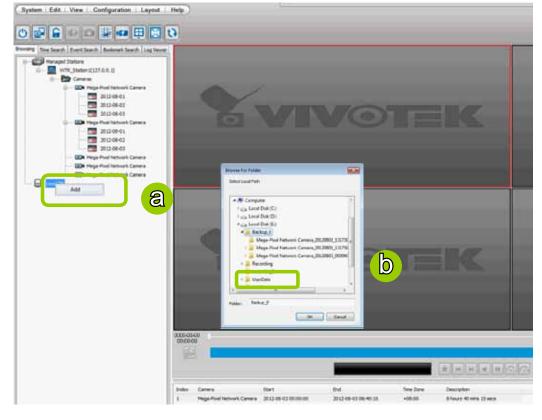
d. When the backup is complete, you will see an information dialog. The recorded data will be restored in the specific folder.

# How to View Backup Files

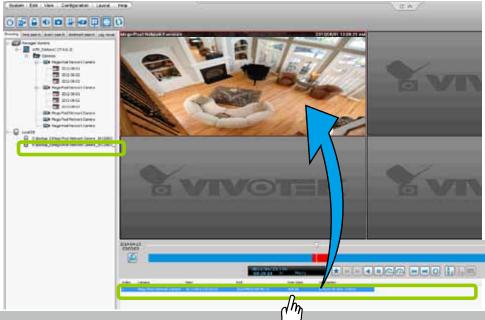
The VAST Playback also allows users to playback backup files, including **Schedule Backup** by VAST LiveClient and **Recorded Data Backup** by VAST Playback.

Please follow the steps below to view backup files:

- a. Right-click Local DB and click Add.
- b. A Load Backup File window will pop up as shown below. Select the \*.dif file to upload.



c. The following is an example of uploaded file, and you can **double-click** it or **drag-and-drop** it to a video cell to playback.

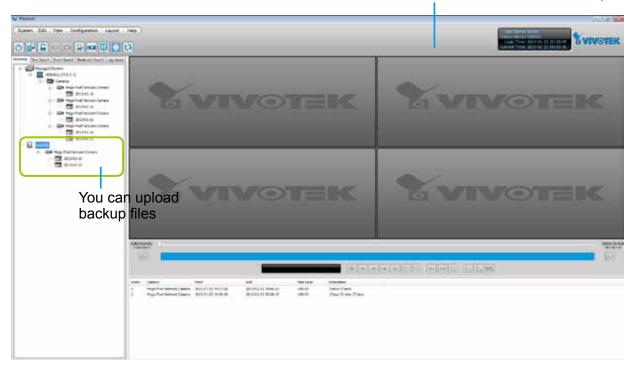




If you want to playback the backup files from the local database, you can also click **Working Offline** in the Login Window without the account information. The VAST Playback will launch as shown below.

😢 VAST Play	back 🎫
User Name:	admin
Password:	I
Port:	3454
Proxy Setting	working Offline
Login	Cancel Hide <<

#### No user account information required

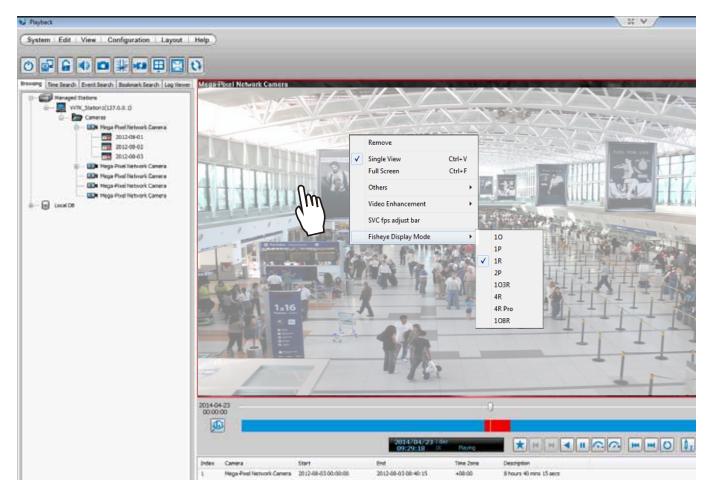


# Model-specific Functions (FE Series Fisheye)

The VAST Playback program offers model-specific functions through a right-click menu. For example, if you playback a video clip made from an FE8171V fisheye camera, a right-click on the playback screen will bring up the Display mode options. You can even exert mouse control while playing a recorded video. You can zoom in, zoom out, and change the view angle as if you are investigating a 3D scenario kept in a recorded point in time.

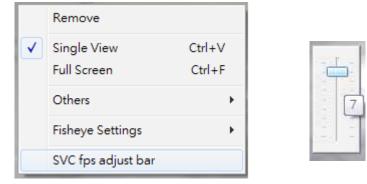
Note that ePTZ functions via the mouse control only takes place in a Regional view, e.g., the 1R or 1O3R mode.

The **Display mode** options and **mouse control** methodologies are identical to those described on page 107 and the following pages.



To configure the SVC-related feature:

1. Right-click on the playback window of an SVC-enabled camera. Select SVC fps adjust bar.



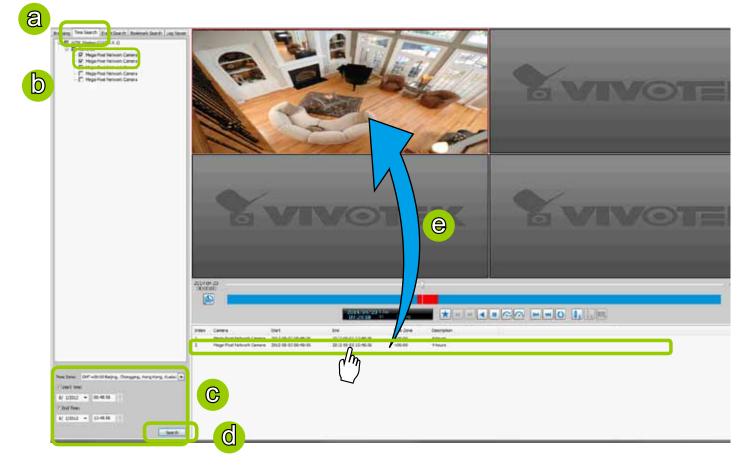
2. A slide bar will appear above the view cell. Click and drag the slide bar. A numeric indicator will display the current selection. See below for the frame rates represented by the numeric indicator. Please refer to page 87 for the introduction of this feature. Changing the SVC vaule takes immediate effect on the number of frames per second shown with the video being played.

Indicator	Frame rate per second (fps)
Maximum	30
7	26
6	22
5	18
4	12
3	8
2	4
1	1
Minimum	1/4

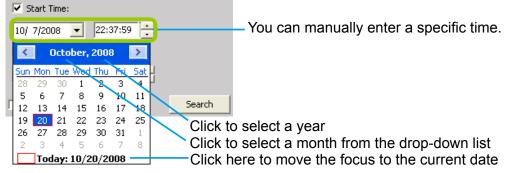
# How to Search for a Video Clip in a Specific Period of time

Please follow the steps below to use **Time Search** function:

a. Open the Time Search page.



- b. Select the target station(s)/device(s) that you want to search for video clips.
- c. Specify the time span. You can choose to set up the start time only, the end time only, or both the start time and end time. The search results will only include the video clips within the time span. If you uncheck both the start time and end time, the search results will include all video clips recorded by the selected device(s).



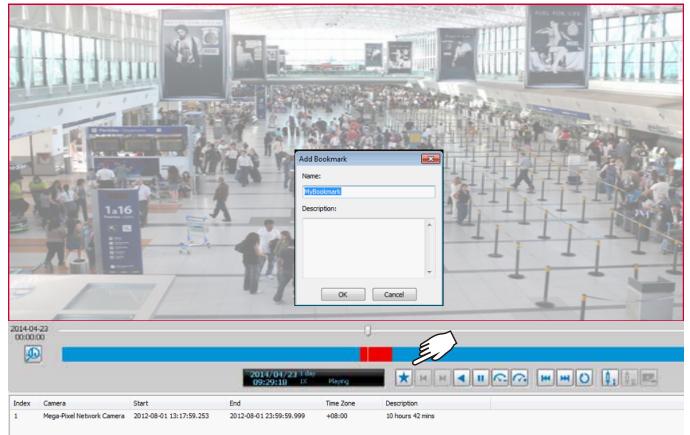
- d. Click **Search** to start time search.
- e. View the retrieved video clips.

# How to Add a Bookmark

Bookmark is a convenient tagging function that allow your to pinpoint and extract a 20-second video clip from out of a video recording. When you see somehting of your interest while browsing through a recorded video

- 1. Click on the 🔀 Bookmark button,
- 2. Enter a name for the bookmark, such as "thief spotted."
- 3. You may enter a short description in the Description field. You may also search for the bookmarks you created later on.

A bookmark comprises a video clip starting from 10 seconds of before and ends at 10 seconds after the point in time you selected.



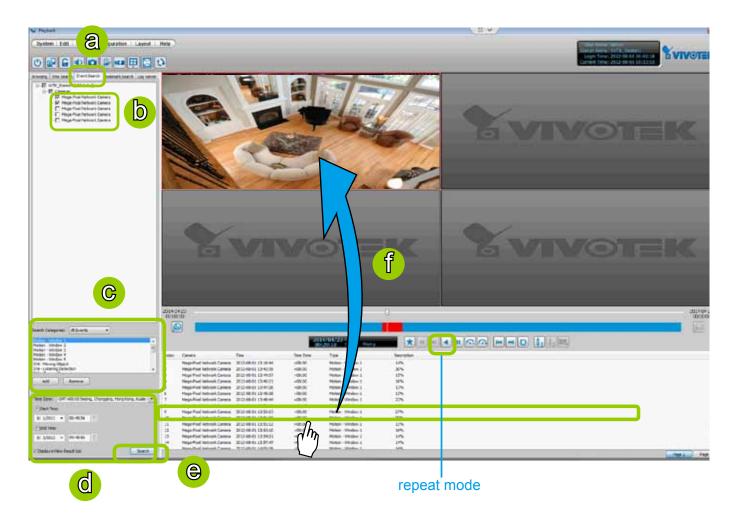
Please refer to page 245 for how to search for bookmarks.

# How to Search for Events

The VAST Playback program offers users an intuitive event search engine for retrieving video clips from the database of recorded videos based on different search criteria such as motion, IVA, or DI events.

Please follow the steps below to search for recorded events:

a. Open the **Event Search** page.



- b. Select the target station(s)/device(s) that you want to search for events.
- c. Specify the **Event Category**. For detailed information, please refer to **Select Event Category** on the following page.
- d. Specify the time span for event search. You can choose to set up the start time only, the end time only, or both the start time and end time. The search results will only include the events within the time span. If you uncheck both the start time and end time, the search results will include all events from the selected device(s). Please refer to step c. on the previous page for detailed information.
- e. Start event search. Please refer to page 273 for detailed information.
- f. View the retrieved video clips. **Double-click** on it or **drag-and-drop** it to the video cell. It will playback in repeat mode.

Note: The length of each video clip will depend on your settings of pre-event time & post-event time for the recording storage. The default setting is **20 seconds**. For more infromation, please refer to page 159 for detailed information.

#### **Select Event Category**

The following introduces the event search categories: All Events, All Motion Events, All IVA events, All DI Events, Named DI Events, PIR, Tampering, Tamperature, Video Loss/ Restore, IR Trigger/Normal, and P-PTZ. You can also add or remove customized events from the list.

#### **Event Category- All Events**

If you select the **All Events** category, all of the events including motion detection, digital input, and intelligent video analysis, PIR, tamper detection, and tamperature alarm will be listed in the search results. You can click **Add** or **Remove** to change the search criteria options.

Search Categories:	All Events	*	
Motion - Window 1 Motion - Window 3 IVA - Moving Object IVA - Loitering Dete IVA - Camera Tampi IVA - Others	All IVA Events All DI Events Named DI Events ection		
Add Re	emove		

#### Event Category- All Motion Events

If you select the **All Motion Events** category, all detected motion events will be included in the search. You can click **Add** or **Remove** to change the search criteria options.

Search Categories: All Motion Events 💙	Customized Events
Mation - Window 1 Motion - Window 2 Motion - Window 3	Event Type: All Motion Events  Search Criteria Window1 Window2 Window3 Window4 Window5
Add Remove	OK Carcel

The parameters of the motion detection windows, such as motion percentage and the time of occurrence are also recorded in the database of the server. If you wish to change the parameters of the motion detection windows such as the position, size, detection sensibility, and motion percentage, please link to the camera's Configuration page to modify the values.



Enable motion detection

#### Event Category- All IVA events

If you select the **All IVA events** category, all detected IVA events will be included in the search. Cameras with embedded intelligent video content analysis are capable of detecting IVA events such as moving objects, loitering, and tamper detection.

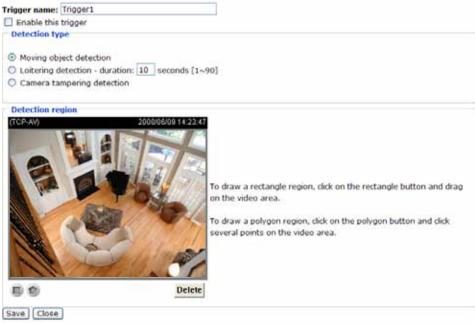
The embedded video content analysis, superior to the conventional motion detection function, is capable of distinguishing between creature's motions, static backgrounds or natural movements such as swaying trees, waves or sunsets to prevent false alarms from environmental noises.

With camera tamper detection, it can detect incidents such as camera redirection, blocking or defocusing of cameras, or even spray-paint. Additionally, a suspicious object in the pre-defined detection region will trigger alarms once the dwell time of the object is longer than the given time.

You can click Add or Remove to change the search criteria items.

earch Categories: All IVA Events	Customized Events
VA - Moving Object VA - Loitering Detection	Event Type: Al IVA Events •
'A - Camera Tampering 'A - Others	Search Criteria
Add Remove	OK Cancel

If you want to change the parameters of IVA, such as the detection region, loitering duration, etc, please link to the camera's Configuration page to modify the values.



#### Event Category- All DI Events

If you select **All DI Events** category, all triggered DI signals will be included in the search. The DI events signify that there is a Digital-Input signal detected by the camera; its corresponding information such as DI-Trigger or DI-Normal signal and the time of occurrence are also transmitted and recorded in the database of the server.

You can click **Add** or **Remove** to change the search criteria options.

Э	Search Categories: All DI Events 🗸 🗸	Customized Events
	DI - Trigger DI - Normal	Event Type: All DL Events
		Search Criteria
	Add Remove	OK Cancel

For more information about DI/DO settings on the connected devices, please refer to page 137 for detailed illustration.

#### **Event Category- Named DI Events**

This category allows you to select only **Named DI Events**--the DI device which you have renamed in the LiveClient. Please refer to Association Management on page 137 for more information about how to rename DI device.

Click **OK** and fill in the name you want to search on the left window.

Search Categories: Named DI Events 💌	Customized Events
	Event Type: All DI Events 🔹
	Search Criteria
	🗖 Trigger 📃 Normal
Add Remove	OK Cancel

The new search criteria will be displayed in the search categories column as shown below. You can click **Add** or **Remove** to change the search criteria options.

Search Categories:	Named DI Events 🔽
Entrance (DI - Trigg	ger)
Add Re	emove

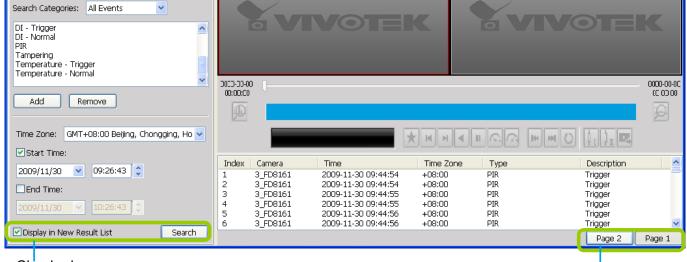
#### **Start Event Search**

After you specify all of the search criteria mentioned above, check/uncheck **Display in new result list** and click **Search** to begin event search.

If Display in new result list is unchecked, all search results will be displayed on the original event list window as shown below.

Motion - Window 3 Motion - Window 2 Motion - Window 3	1			101	VIVOI	
Add Remove	00 CO.C	0				
Time Zone: GMT+08:00 Beijing, Chongging, Ho 😪			(文)月.	n a n G		R
Start Time:	Index	Camera	Time	Time Zone	Туре	Description
2009/11/30 👻 09:26:43 🛢	1	Mega-Pixel Network Ca	2014-09-25 14:01:20	+08:00	Motion - Window 1	19%
2009/11/30 🚫 09:20:43 💽			built a state must be a state must	+08:00	Motion - Window 1	43%
	2	Mega-Pixel Network Ca	2014-09-25 14:02:39	T MARKEN WINE		1.000
End Time:	2 3	Mega-Pixel Network Ca	2014-09-25 14:15:03	+08:00	Motion - Window 1	38%
]End Time:	2 3 4	Mega-Pixel Network Ca Mega-Pixel Network Ca	2014-09-25 14:15:03 2014-09-25 14:17:37	+08:00 +08:00	Motion - Window 1 Motion - Window 1	38% 37%
Grid Time: 2009/11/20 •• [10:36:43 ] 2	2 3 4	Mega-Pixel Network Ca Mega-Pixel Network Ca Mega-Pixel Network Ca	2014-09-25 14:15:03 2014-09-25 14:17:37 2014-09-25 14:18:03	+08:00 +08:00 +08:00	Motion - Window 1 Motion - Window 1 Motion - Window 1	38% 37% 35%
End Time:	2 3 4	Mega-Pixel Network Ca Mega-Pixel Network Ca	2014-09-25 14:15:03 2014-09-25 14:17:37 2014-09-25 14:18:03 2014-09-25 14:18:16	+08:00 +08:00	Motion - Window 1 Motion - Window 1	38% 37%

- In the above picture, The Type field in the search result page shows the event category, and the Description field displays the motion percentage of the detection window. Please refer to page 270 for more information about Motion Events.
- If you select Display in new result list and click Search, the search results will be displayed on a new page as shown below. This allows you to place the search results of each search category on an individual page. You can set up to 5 pages in the event list window.



Checked

You can set up to 5 pages.



The P-PTZ event type refers to those triggered by the Auto Tracking actions.

## **Backup the Event Videos**

Please follow the steps below to backup the evnet videos on the results list:

a. Select the video clips you want to backup. You can select more than one video clip.

b. Right-click the selected video clips and click Backup.

Index	Camera Time		Time Zone	Туре	Description	~
1	3_FD8161 2009-	11-30 09:44:54	+08:00	PIR	Trigger	
2	3_FD8161 2009-	11-30 09:44:54 👘	+08:00	PIR	Trigger	
3	3_F <u>D8161 2009</u> -	11-30 09:44:55	+08:00	PIR	Trigger	
4	3 Fl Clear All Results	30 0 <b>) M</b> \55	+08:00	PIR	Trigger	
5	Backup	30 OS († 6	+08:00	PIR	Trigger	
6	3	- 30 09:44:56	+08:00	PIR	Trigger	~
	Show <u>M</u> illiseconds				Page 2 Page	e 1

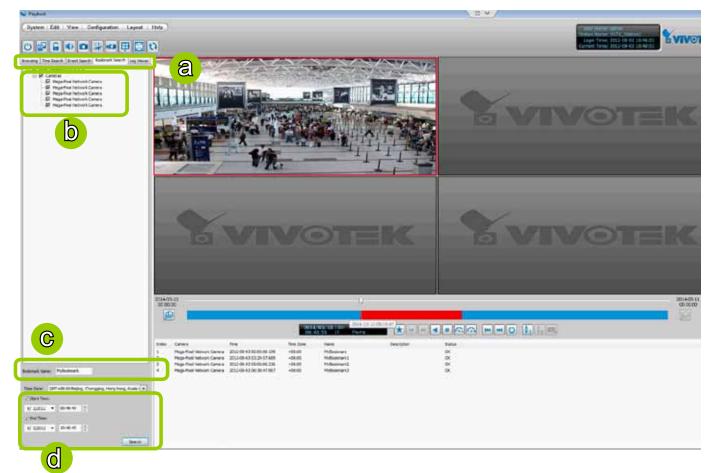
c. A **Backup Settings** window will pop up. For more information about how to set up the Backup Settings, please refer to page 261. For more information about how to view backup files, please refer to page 263 for detailed illustration.

# How to Search for a Bookmark

Please follow the steps below to use **Bookmark Search** function:

a. Click on the tabbed menu to open the Bookmark Search page.

b. Select the cameras which have video clips you have placed bookmarks on.



- c. Enter the name of bookmark.
- d. Specify a range of time during which the video streams were recorded and its points in time were bookmarked.
- Click **search**. You can then click on a bookmark to display the short video clip extracted from within the recorded video.

To remove an existing bookmark, left-click to select an entry, and then right-click to display the Delete 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.

0:00:						_
ndex	Camera	Tme	Time Zone	Name	2014-03-10 08:05 47	Status
1	20x Zoom Mega-Pixel	2013-07-04 09:29:30	+08:00	MyBookmark		OK OK
3	20x Zoom Mega-Pixel	2013/07-04 10:44:33	+08:00	MyBookma	Delete Cleer All Results Backup	OK.

# How to Search Logs

The VAST Playback program offers a convenient log engine for searching all local logs based on different search criteria such as log category, log type, and log level. The search results will be displayed in the log viewer window along with the detailed log history.

Please follow the steps below to search logs:

- a. Open the Log Viewer page.
- b. Select the target station where you want to search logs.
- c. Specify the Log Category. For detailed information, please refer to Select Log Category on page 277.
- d. Specify the **User Account**. If you have added other user accounts to the station, you can select one to search its login history. For detailed information about user account, please refer to **How to Manage User Accounts** on page 129.
- e. Specify the **Search Result**. Select **All** to display all search results; select **Success** to display successful log activities only; select **Fail** to display failed log activities only.
- f. Specify the Log Type. For detailed information, please refer to Select Log Type on page 277.
- g. Specify the Log Level. For detailed information, please refer to Select Log Level on page 277.
- h. Specify the search time span. You can check the start time only, the end time only, or both the start time and end time. The search will only include the events within the time span. If you uncheck both the start time and end time, the search will include all events saved by the server. Please refer to page 267 for detailed information.
- i. Start the log search and the results will be displayed on the log list window.

wing Time Sea	ech   Errent Smerch 1.20 Verver	3 ades	True	Time Zone	<ul> <li>Cineger:</li> </ul>	Lend	Tex	Nex41	User	Target:	Desception
		1.11	2010-01-16 10:56-05	+00:00	Sector Log	High	Server Start	Success		Local	Service Name+W/KST Recording
White White	Okutawi 1 (192, 166, 5, 122)	2	2010-01-18 30:56:05	+1301500	sister: Log	1921	Server Start.	34,00095		Local	Service Name=12857 Query Ser.
Π.		3.	2010-01-10 10:56 15	+00:00	System Log	14(2)	Cerver Start	Success		Local	Service Name+VACT Backup Se.
b			2010-01-18 30/96/13	+06100	System Log	High	Server Start	SLCORS		LOCAL	Service Name+VAST Event Ser
0		5	2010-01-10 50:96-21	+00:00	Sister Log	1401	Server Start	Success		Local	Genvice Name - VAST Configurati
2		16	2010-01-18 11:26:30	+08:90	Coeriton Log	Northa	Login	fluccess	STAdmin:	Local	Overflert   Use account=STA
		25	2010-01-18 13:11:22	+00:00	Operation Log	terrai	Login	Success	STAdmin.	Local	(Hisback) User Account -STAIL
		.8	2010-01-18 36:34 24	+08:00	Eventing	Han	Carners Connected to	Success		Local	Target Camera Name+1_JP8330
		9	2010-01-10 30-14-25	+00:00	Conston Log	Norrai	Droet Camera	Success	STAdmin	Local	New Carsers Name-1_JF8300
		- 50	2010-01-18 16:14:25	+06:00	Event Log	High	Camera Recording Stop	faccents		Local	Target Carvera Name=1, 398300
		23	2010-01-18 35 14 27	+06:00	Energi Log	Han	Carriera Recording Start	Success		Local	Target Careria Nare+1 \$9833
		12	2010-01-18 (9/98/22	+08:00	Coleration Log	Norral	1000/1	SACHIE	STAdoin	Local	(Flashark) Litar Account +STAd
		-13	2010-01-18 (9:98-41	+00:00	Coeration Leg	Norral	Update Layout	TRACCOUNT	STABIES	LOCAL	Target LHS Name+Default Map
		24	2010-31-18 19:59 41	+00:00	Coveration Log	Nomial	Logout	Success	\$TAdnes	Local	(LiveChert) User Account=STA
		- 25	2010-01-18 19/29-12	+08.00	Operation Log	NOTTHE	Logh	5,6085	STADIO	LOCA	(UverRent) User Account#STA
		- 26	2010-01-16 20:07 24	+09:00	Coerston Log	Norral	Logout	Success	STAdmin.	Local	(UveClent) User AccounteSTA
		- 27	2010-01-19 09:33 42	+00.00	THISTORY LOG	19(7)	Server Start	3ACCHIS		LOCA	Service Name=VAST Query Ser
		20	2010-01-12 09:53:43	+00:00	Ender Log	1421	Server Etart.	(Ruccent)		Local	Genrico Name -1/AST Recording
		-29	2010-01-19 09/33:44	+08.00	Setter: Log	HICTI	Server Start	SALCORES		LOCAL	Service Name+%AST Backup Se
		20	2010 2023-44	+00:00	Gestorr Log	Hap	Server Start	Success.		Local	Service Name+VAGT Event Ser-
		21	207 33:46	+08:00	SHR01 102	1821	Server Start	SLOCES		Local	Service Name+KAST Configurats
		22	C	+00:00	Event Log	14(2)	Canera Connected to	Success		LOCIE	Target Carners Name+1_\$P0030
pre:	All Local Logi	28	201 2.37	08:00	Exerct Log	Hon	Camera Recording Start	56,00005		1.004	Target Canera Name+1, \$P\$33
		24	2010	00:00	Operation Log	fomal	Login	Success	STAdmin	Local	(LiveClent   User Account -STA
		1 26			Coeriton Log		Logout	fluccers	STAdmin-	LOCA	(DesClient) Use Account+STA
		26	2010-01-19 15 11 .	<b>e</b>	Operation Log		Logn	Success	STAdmin.	Local	(LiveOent) User Account-STA
tr:	AI	27	2010-05-10 29:27:57	- 408 ( <del>-</del>	0° (100	Norra	Inquit liker	Success.	STAdmin	Local	New Liker NamewLiker3, New R.
		- 28	2010-01-19 17:12 12	+00.0	<b>F</b>	Nama	Logis	SLOOMS	\$7Adries	Local	(Reyback) User Account - STAd
NEWC	14	20	2010-01-14 30:25 12	+06:00	0	Acettal	Logout	faccent	STAdmin	Local	(Flayback) Liker Account=ST&d
1626			PC20-02-22 20120 20	* COLOR	- U //	~ 1	Logout	Success	STAININ	Local	(DvpClierk) User Account=STA
avet	4	71	2010-01-20 09:29:09	+09:00		ମ	Senor Start	9,0080		Local	Service Name=V/AST Query Sar
area.			5030-01-01-04-08-30	+00000	SUMMER OF		Server Start	TRACCOSE		LOCA	Service Narae+VAST (Iven: Ser.,
		32	2010-31-20 09:29 13	+00:00		9	Server Utart	Success		Local	Barvice Name=VAST Backup Ba
		24	2010-01-20 09/28 10	+08.00	SHIMIN LOG	(144)	Server Start	5.6085		LOCA	Service Name+VAST Recolding
		將	2010-01-20 09:39 12	409:00	System Log	High	Solver Start	SUCCESS		Local	Service Name +VAST. Configurats
Date date.	405:00 Belling, Changeling, Hong Kang, Rasis Lampor	2	2010-01-20 09:28:13	+00.00	Event Log	1001	Catheral Connected to	3400815		1004	Target Canera Name=1, (PR030)
	and the second s	47	2018-01-20 09:20 18	+00:00	EHERE LOG	1421	Camera Recording Start	(Ruccent)		Local	Target Canera Name+1_\$2033
Lard Thirm!		38	2010/01/20 17:31:59	+06:90	Event Log	Han	Camera Recording Stop	SLOCERS		LOCAL	Target Cartera Mane+1, IP8330
	Contraction of the second s	22	2010-01-20 17:03 13	+00:00	Event Log	Han	Canona Disconnected E.,	SACCERS		Local	Target Carlora None=1_\$P0000
0/1/2 💌	09.11.21	40	2010-01-20 17:30:20	+00:00	Event Log	18(21)	Camera Recording Start	SUCCESS		LOCA	Target Carters Name - 1, 3P030
122010	h	41	2010-01-00 17/00-26	+00:00	Event Log	14gh	Camera Connected to	Success	OT Subsets	LOCA	Target Carvora Navie+1_\$P0000
nd Time:	Commentation and the second	43	2010-01-22 34:36:39 2010-01-22 34:20:21	+06:00	Coenton Log	Norra	Logn Lognut	Success	STAdmin	Local	(DveClent) Use Account+STA (DveClent) Use Account+STA
(12) 2		40	2010-01-22 34:40.21	+00:00	Operation Log Operation Log	foma		SACCHES .	STAdmin.	Local	(LiveCent) Use Account=STA
14 14 5 14	VSCEAR #	2	2010-01-22 18:28 13	+0000		Northe		Success	STAdres STAdres	Local	(DveChert) Over Account+STA
			7/10/01/11 18:28 13	*Ge.00	Operation Log	PLOT 18	1000	300.80	21462(81)	100.6	
	Sca	Cear A	Results   Chica Legel A	E-po	t All Logi						LOCIFLOGI LOGN HISONY LOGN ACT

# Select Log Category/Log Type/Log Level

The following table shows the breakdown of log category, level, and type. The search results will be different according to your selections.

Log Categories	Log Levels	Log Types
Operation Log	Normal	Login / Logout Insert User Update User Name Update User Password Update User Privilege Delete User Insert Station Update Station Information Update Station Information Delete Station Insert Camera Update Camera Information Delete Camera Set Recording Group Insert Recording Schedule / Update Recording Schedule / Delete Recording Schedule Insert Event Management / Update Recording Group / Delete Recording Group Insert Recording Group / Update Recording Group / Delete Recording Group Insert Recording Path / Update Recording Group / Delete Recording Group Insert Recording Path / Update Recording Group / Delete Recording Path Insert Camera to the Recording Group / Delete Recording Path Insert Camera to the Recording Group Update Camera information in the Recording Group Delete Camera from the Recording Group Move Camera to another Recording Group Insert Layout / Update Layout / Delete Layout Set Digital Output Update Scheduled Backup Update Scheduled Backup Update Server Port Set DINS Server Create Directory / Rename Directory / Delete Directory Insert SMTP Server / Update SMTP Server Insert SMTP Server / Update SMTP Server / Delete SMTP Server Insert SMTP Server / Update SMTP Server / Delete SMTP Server Insert SMTP Server / Update SMTP Server / Delete SMTP Server Insert SMTP Server / Update SMTP Server / Delete SMTP Server Insert SMTP Server / Update SMTP Server / Delete SMTP Server Insert Network Storage Device / Update Network Storage Device / Delete Network Storage Device Set GSM Modem Set DI/DO Rename Set DI/DO Rename Set Relay Settings Update Ucense Information Insert Matrix Recipient / Insert Matrix Recipient Information / Delete Matrix Recipient
	High	Manually Begin Recording Manually Stop Recording
	Low	Camera PTZ, Iris, Focus, Pan, Patrol Control Click on Image Select Preset Location
System Log	High	Server Start / Server Stop Trial Expired Key Dongle Lost Virtual Memory Low Network Lost / Storage lost

Log Categories	Log Levels	Log Types
Event Log	High	Camera Disconnected from the Server / Camera Connected to the Server Parent Station Connection Lost / Parent Station Connection Restore Sub-station Disconnected / Sub-station Connected Camera Recording Start / Camera Recording Stop Start Scheduled Backup / Stop Scheduled Backup Event Trigger

#### Search All Local Logs

			Log Cate	gory						
				Log L	evel					
					Log Type					
Index	Time	Time Zone	Category	Level	Type	Result	User	Target	Description	~
1	2009-12-09 09:50:54	+08:00	System Log	High	Server Stop	Success		Local	Service Name=VAST Backup	
2	2009-12-09 09:50:54	+08:00	System Log	High	Server Stop	Success		Local	Service Name=VAST Event S	
3	2009-12-09 09:50:55	+08:00	System Log	High	Server Stop	Success		Local	Service Name=VAST Query S	
4	2009-12-09 09:50:55	+08:00	System Log	High	Server Stop	Success		Local	Service Name=VAST Recordi	
5	2009-12-09 09:50:55	+08:00	System Log	High	Server Stop	Success		Local	Service Name=VAST Configur	. =
6	2009-12-09 09:50:56	+08:00	Event Log	High	Camera Disconnecte	Success		Local	Target Camera Name=1_PZ7	
7	2009-12-09 09:50:56	+08:00	Event Log	High	Camera Disconnecte	Success		Local	Target Camera Name=2_IP8	
8	2009-12-09 09:51:42	+08:00	System Log	High	Server Start	Success		Local	Service Name=VAST Recordi	
9	2009-12-09 09:51:44	+08:00	System Log	High	Server Start	Success		Local	Service Name=VAST Query S	
10	2009-12-09 09:51:47	+08:00	System Log	High	Server Start	Success		Local	Service Name=VAST Event S	_
11	2009-12-09 09:51:48	+08:00	System Log	High	Server Start	Success		Local	Service Name=VAST Backup	
12	2009-12-09 09:51:50	+08:00	System Log	High	Server Start	Success		Local	Service Name=VAST Configur	
13	2009-12-09 09:51:51	+08:00	Event Log	High	Camera Connected t	Success		Local	Target Camera Name=2_IP8	
14	2009-12-09 09:51:51	+08:00	Event Log	High	Camera Connected t	Success		Local	Target Camera Name=1_PZ7	
15	2009-12-09 09:51:52	+08:00	Event Log	High	Camera Recording Stop	Success		Local	Target Camera Name=3_FD8	~
Clear A	All Results Trace Login	Activities	Export All Logs					Local Lo	ogs Login History Login Activi	ties

Click to export all search results from the list Click to remove all search results from the list

#### Search Login History

Select **Login History** from the log category field and click the **Search** button below, the search results, including all login logs, will be displayed on the Login History page.

Browsing   Time Se	earch Event Search Log Verwer	Index	User	Logn Time	Login Result	Logout Time	Logout Result	Time Zone	Description	
VVTK	_Station1(192.168.5.122)	4 74 75 4	STAdmin STAdmin STAdmin STAdmin	2010-02-01 09-41:00 2010-02-01 11:05-53 2010-02-01 11:05-53 2010-02-01 11:40:55 2010-02-02 09-31:04	Success Success Success Success	2010-02-01 11:48-52 2010-02-01 20:16:21 2010-02-01 20:16:21 2010-02-01 20:16:15	Success Success Success	+00:00 +00:00 +00:00 +00:00	Flighack LiveClent Clighack LiveClent	
Category:	Login History	<b>1</b>								
User		~								
Result:	Al	~								
Log Type:	H.									
Log Level	(H)									
	C Intel of									
Time Zone: GM Start Time: 2010/ 2/ 1 End Time: 2010/ 2/ 2		ng, 👻								
	Se	arch Gear	All Results	Trace Logn Activities	port Al Logs			Local	Logs Logn History	ogin Activities

#### **Search Login Activities**

This function allows you to search the operations the user performed during the login period of time. You can search for login activities on the Local Logs or Login History page.

- Search Login Activities on the Local Logs page:
  - a. Click on the Local Logs page.
  - b. Select a login/logout option from the list.
  - c. Click **Trace Login Activities** (or you can **right-click** the selected login/logout option on the list, then click **Trace Login Activities**).

Index	Time	Time Zone	Category	Level	Туре	Result	User	Target	Description	^
1	2010-01-18 10:56:05	+08:00	System Log	High	Server Start	Success		Local	Service Name=VAST Recording	-
2	2010-01-18 10:56:05	+08:00	System Log	High		Success		Local	Service Name=VAST Query Ser	
3	2010-01-18 10:56:16	+08:00	System Log	High	Ver Start ver Start	Success		Local	Service Name=VAST Backup Se	
4	2010-01-18 10:56:18	+08:00	System Log	High		Success		Local	Service Name=VAST Event Ser	
5	2010-01-18 10:56:21	+08:00	System Log	High	- orver Start	Success		Local	Service Name=VAST Configurati	
6	2010-01-18 11:26:30	+08:00	Operation Log	Normal	Login	Success	STAdmin	Local	(LiveClient) User Account=STA	
7	2010-01-18 13:11:22	+08:00	Operation Log	Nomal	LOGF Clear All Results	tess	STAdmin	Local	(Playback) User Account=STAd	
8	2010-01-18 16:14:24	+08:00	Event Log	dh	Came Ince Login Act	ivities O		Local	Target Camera Name=1_IP8330	
9	2010-01-18 16:14:25	+08:00	Operation Log	$(\gamma, \gamma)$	Inser	C C	STAdmin	Local	New Camera Name=1_IP8330,	
10	2010-01-18 16:14:25	+08:00	Event Log	t J	Came Show Millisecon	ds		Local	Target Camera Name=1_IP8330	
11	2010-01-18 16:14:27	+08:00	Event Log	$\checkmark$	Camera recording over	< oundess		Local	Target Camera Name=1_IP833	
12	2010-01-18 19:58:22	+08:00	Operation Log	Normal	Logout	Success	STAdmin	Local	(Playback) User Account=STAd	
13	2010-01-18 19:58:41	+08:00	Operation Log	Normal	Update Layout	Success	STAdmin	Local	Target LMS Name=Default Map,	
14	2010-01-18 19:58:41	+08:00	Operation Log	Normal	Logout	Success	STAdmin	Local	(LiveClient) User Account=STA	
15	2010-01-18 19:59:12	+08:00	Operation Log	Normal	Login	Success	STAdmin	Local	(LiveClient) User Account=STA	
16		○ 08:00	Operation Log	Normal	Logout	Success	STAdmin	Local	(LiveClient) User Account=STA	
17	2010-01-19 09:33:42	08:00	System Log	High	Server Start	Success		1000	Service Name=VAST Query Ser	$\sim$
								a	Local Logs Login History Login Activit	ine
Clear A	I Results Trace Login /	Activities Expo	rt All Logs					all	Local Loger Activity Loger Activity	RED

d. The search results of the login activities will be displayed on the Login Activities page as shown below.

Index	Time	Time Zone	Category	Level	Туре	Result	User	Target	Description
1	2010-01-18 11:26:30	+08:00	Operation Log	Normal		Success	STAdmin	Local	(LiveClient) User Account=STA
2	2010-01-18 16:14:25	+08:00	Operation Log	Normal	Insert Camera	Success	STAdmin	Local	New Camera Name=1_IP8330,
3	2010-01-18 19:58:41	+08:00	Operation Log	Normal	Update Layout	Success	STAdmin	Local	Target LMS Name=Default Map,
4	2010-01-18 19:58:41	+08:00	Operation Log	Normal	Logout	Success	STAdmin	Local	(LiveClient) User Account=STA

Clear All Results Trace Login Activities Export All Logs	Local Logs Login History	Login Activities
<ul> <li>Search Login Activities on the Login History page</li> </ul>	:	

- a. Click on the **Login History** page.
- b. Select a login/logout option from the list.
- c. Click **Trace Login Activities** (or you can **right-click** the selected login/logout item on the list and click **Trace Login Activities**).

Index	User	Login Time	Login Result	Logout Time	Logout Result	Time Zone	Description	
1	STAdmin	2010-02-01 09:41:38	Success	2010-02-01 11:48:52	Success	+08:00	Playback	
2	STAdmin	2010-02-01 11:05:53		All Results (16:21	Success	+08:00	LiveClient	
3	STAdmin	2010-02-01 11:48:55		Login Activities	Success	+08:00	Playback	
4	STAdmin	2010-02-02 09:31:04	1 4	Login Activities C		+08:00	LiveClient	
			Show	<u>M</u> illiseconds				
		L	$\Box$					
								a
Clear A	ll Results	Trace Login Activities	Export All Logs				Local Logs	Login History Login Activities
		C						

d. The search results of the login activities will be displayed on the Login Activities page as shown below.

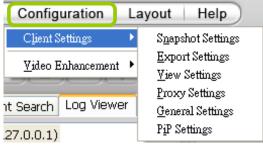
dex	Time	Time Zone	Category	Level	Type	Result	User	Target	Description
	2010-02-01 11:05:53 2010-02-01 20:16:21	+08:00 +08:00	Operation Log Operation Log	Normal Normal	Login Logout	Success Success	STAdmin STAdmin	Local Local	(LiveClient) User Account=STA (LiveClient) User Account=STA
ar A	II Results Trace Login A	ctivities Expor	t All Logs					Local	Logs Login History Login Activi
	)								
				-					
		the state of the second	I aval field	1 460	a a rah raavilta	will includ		lavala	If you select Low in

Log Level field and select **Including above level** as shown in the picture on the left below, the search results will include all levels of logs. But if you select **Normal** in the **Log Level** field and select **Including above level** as shown in the picture on the right below, the search results will only include **Normal-level** and **High-level** logs.

Log Level:	All	*	Log Level:	Low	<b>~</b>
		✓ Including above level			Including above level

# How to Configure Client Settings

On Client Settings, you can configure Snapshot Settings, Export Settings, View Settings, Proxy Settings, and General Settings. It allows you to save snapshots and media files on the local computer.



#### **Snapshot Settings**

When you play a recorded video, VAST Playback also allows you to take snapshots. For detailed information about **Snapshot Settings**, please refer to page 198.

#### **Export Settings**

When you playback a recorded video, the VAST server allows you to export part of the recorded video in EXE, 3GP, or AVI format to your local computer. Before exporting a media file, please set up Export Settings first. For detailed information about how to set up EXE, 3GP, and AVI **Export Settings**, please refer to Record Settings on page 200.

The default exporting path is: C:\ProgramData\VIVOTEK Inc\VAST\Client\PlayBack\Export

#### Limitations

- 1. The size of exported footage depends on the file size limitation. When the limitation is reached, files will be concluded regardless of the length of your selection.
- 2. The Export button will not be available when there is another exporting task.
- 3. If the time settings on camera and VAST server are inconsistent, the export task will generate files of unexpected length.
- 4. The minimum export length is 1 minute. The maximum is 150 minutes. However, due to the embedded limitation, the approximate max. file size is 3.7GB.

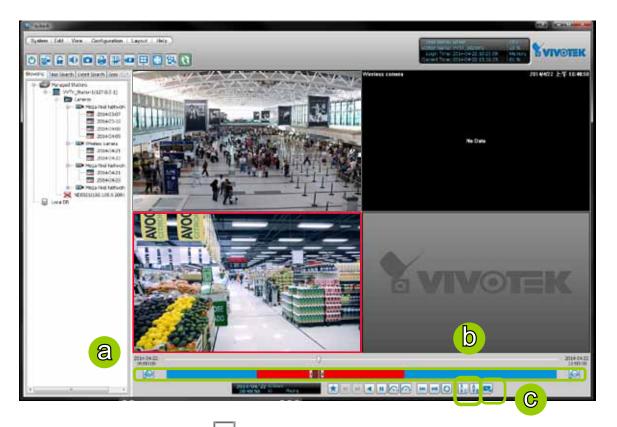
#### Export an EXE/3GP/AVI File

Please follow the steps below to convert part of an EXE/3GP/AVI file of recorded video:

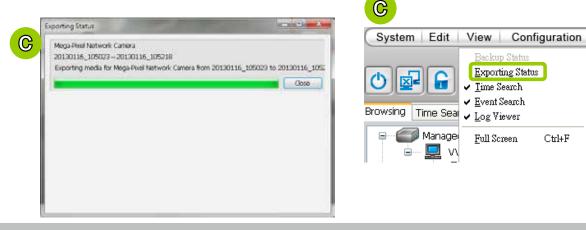
- a. Playback a video clip from which you want to export a media file.
- b. Set a period of time. Move the timeline slider bar to the desired start time and click Marker I  $\downarrow$ . Move the timeline slider bar to the desired end time and click Marker II  $\downarrow$ .



Currently exporting video files from the NVR series is not supported.



- c. Click Export EXE/3GP/AVI Link, the server will start to export the data and popup a window showing the exporting status. If you close the status window, you can also open it again by clicking View > Exporting Status.
- d. When the export is complete, you will see an information dialog. The exported data will be restored in the preset storage folder on your local computer (C:\ProgramData\Documents\VIVOTEK Inc\VAST\ Client\PlayBack\Export).



#### **View Settings**

This section allows you to set up the display mode of video cell. For detailed information about **View Settings**, please refer to page 206.

#### **Proxy Settings**

Please refer to page 219 for detailed illustration.

#### **General Settings**

#### System Settings

Please refer to page 209 for detailed information.

#### **Display Settings**

Enable de-interlace function: Select this option if your connected device does not support de-interlace function. For example: VS7100.

🕈 General Settings 🛛 🔀
System Settings
Retrieve RTSP stream on specified port: 554
Connect substation streaming via relay
Display Settings
Enable de-interlace function

#### How to Configure Video Enhancement

The Playback also allows you to enable post-image enhancement and defog for video viewing. Please refer to page 223 for detailed information.

# How to Search for a Device on the Hierarchical Management Tree

The Playback also allows you to conveniently search for an inserted device. Please refer to page 228 for detailed information.

#### How to Print a Video Image

The Playback also allows you print out an image of live video. Please refer to page 229 for detailed information.

# How to Lock VAST Playback for Security Concerns

If you happen to be away from your computer, for security reasons, we suggest you lock the program. When VAST Playback is locked, the user must enter the correct password to unlock and access the program again.

- To lock Playback, click Unlock on the quick access bar or click System > Lock on the system menu. The Unlock icon will then turn into Lock .
- To unlock Playback, click and enter the correct password in the popup window.

📎 Playback	V Confirm
System Edit View Configuration	The application is locked. Please enter the password for admin.
Lock Ctrl+L Launch LiveClient Launch System Manager Logout Exit	

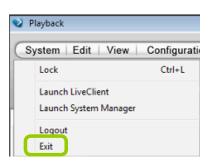
# How to Log out from the VAST Server

To log out from the current server, click the station and click **Logout** and the quick access bar or click **System > Logout** on the menu bar. You can also **right-click** the station and click **Logout**. A confirmation window will pop up. Click **OK** to confirm or **Cancel** to return to the VAST Playback window.

Lock Ctrl+L Launch LiveClient	Browsing Time Search Event Search Bookmark Search Log Viewer	Contem
Launch System Manager Logout Exit	Image Stations           Image Station (122.0.0.1)           Image Station (122.0.0.1)	This will terminate the current connection. Are you sure you want to continue?

# How to Exit VAST Playback

To exit VAST Playback, click **Exit** on the quick access bar or click **System > Exit** on the menu bar. A confirmation window will pop up. Click **OK** to confirm or **Cancel** to return to the VAST Playback window. When you exit the program, your user account will be automatically logged out from the current server.



you sure yo	ou want to exit the program?
ОК	Cancel

# Import and Export Utility

VAST supports import and export utility for user to keep record of all server settings. You can use the export file to copy the configuration on another host.

# **Export Utility**

Please follow the steps below to export the server settings:

- a. Under Microsoft Windows, choose "Start > All Programs > VIVOTEK Inc > VAST > Tools > Importexport Utility."
- b. The **Import/Export Utility** window will pop up. Click **Export** and select a target folder. The system will start to export a .bin file.

Options	
Export current se	
Configuration and	tinge C
Import previous :	settings
Restore	Copy withings
	3 (-

Import/Export Utility      S.Start service			ackup
Processing Export is started at 2010-03-11 13:44:09 			
done 4.Backup configuration files done 5.Start service		>	
	Hide Detail	Close	

# **Import Utility**

Please follow the steps below to import the server settings:

- a. Under Microsoft Windows, choose "Start > All Programs > VIVOTEK Inc > VAST > Tools > Importexport Utility."
- b. The **Import/Export Utility** window will pop up. Click **Import** and select the export file. The system will start to import the file.

You should then select the Restore or Copy settings options.

**Restore**: If this is selected, the VAST server GUID will also be restored. This option applies when you need to restore as crashed server.

**Copy Settings**: This applies you use the exported profile to duplicate your configuration to multiple computers. A new server GUID will be generated.

Warning	
⚠	Import will drop all current settings in the station. The system will still recycle the video files in the original paths when the new settings with new paths is imported. Would you like to continue?
	■ Import/Export Utility 3.Stop service Processing Import is started at 2010-03-11 14:22:17 I. Venfy import file (C:Documents and Settings\ritali\点面\backup.bin) done 2. Prerequisites checking done 3.Stop service

# VAST Service Control Tool

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

Under Microsoft Windows, choose "Start > All Programs > VIVOTEK Inc > VAST > Tools > VMServiceControl."

💼 VAST 🔹 🔸	🕙 LiveCl	lient	
	💿 Playba	ck	
	🗑 Uninst	all	
	💼 Tools	•	💾 Import-Export Utility
			🛛 VMSServiceControl

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:

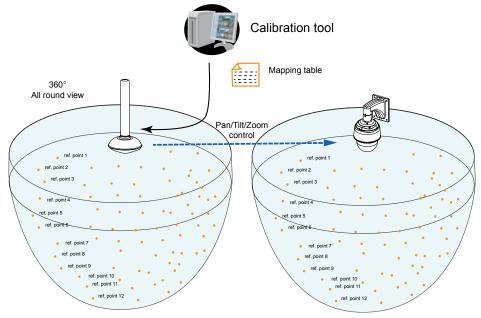
VAST Service Control
Service Status
Version: 1.7.7.4
Status: Running
Start Stop Restart
Close

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

# Appendix A Panoramic PTZ (P-PTZ) Configuration

# **Enable Panoramic PTZ on VAST**

The process of configuring two cameras (1 fisheye and 1 speed dome) into the Panoramic PTZ configuration takes place on a PC using the calibration tool. The Auto Tracking feature is configured using a web console with the fisheye camera. A Panoramic PTZ package should comprise two cameras running specific firmware for this application and a software CD containing all necessary utilities. For configuration details, please refer to the **Panoramic PTZ Installation Guide**.

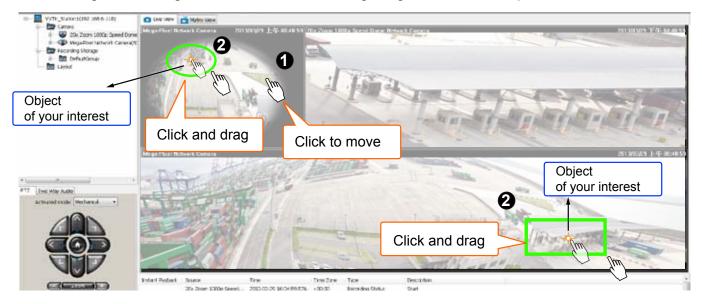


To exert Panoramic PTZ control on VAST:

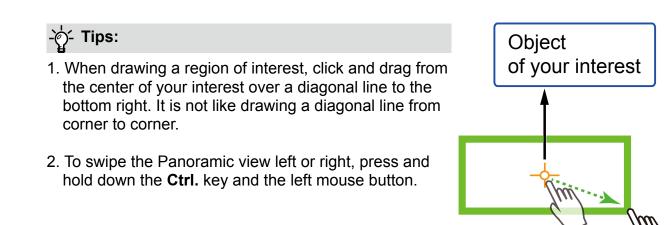
- 1. Once these two cameras are configured into an interactive pair, insert these cameras into your VAST configuration.
- 2. Select a preferred layout using the Layout 🙂 button. The 1P+2, 1P+6, and 1P+8 layouts are specifically designed for the Panoramic PTZ configuration.
- 3. Taking the 1P+2 layout as an example, once they are listed on the device list, click and drag the fisheye camera to the upper left and the bottom view cells. Place the speed dome in the upper right view cell.

Fisheye 10	Speed Dome		
Fisheye 1P			

- 4. Right-click on the fisheye's view cell to change its Display mode either into the **1O** (Original) or the **1P** (Panoramic) mode. Note that the Panoramic PTZ control does not take effects on the "**R**" (Regional) mode and the combinations of other display modes.
- 5. There are two different ways to quickly exert Panoramic PTZ control. The pan, tilt, and zoom actions are made from the fisheye's 360° hemispheric overview:
  - 5-1. Click on a spot on the fisheye's Original or Panoramic view where you detected a condition of your interest. The speed dome will aim its lens at the corresponding position to cover that field of view.
  - 5-2. Click and drag a region of interest either on the Original or on the Panoramic view. The speed dome will move to that region and zoom in to fill the same proportion of view into its view cell.
    - On the Original view, click-and-drag creates a circular region of interest.
    - On the Panoramic view, a square region.
    - If you draw a small region, the speed dome will zoom in on the scene. The smaller the region, the larger the zoom-in ratio. A large region makes the speed dome to zoom out.



The speed dome camera automatically performs optical zoom in/out to best fit the selected field of view until the maximum and minimum zoom ratio is reached.





- The fisheye and the speed dome are made into an interactive pair using the calibration tool. The VAST software provides the control interface only. If the cameras have not been properly configured, the Panoramic PTZ function will not take effect.
- 2. If the password of the speed dome camera has been changed, you will need to open a web console with the fisheye camera to change the coordinate password.
- 3. You may need to reset the fisheye camera if the speed dome camera is powered on after you started the VAST software.
- 4. The precision level of the interactive positions between the view cells of the fisheye and the speed dome is determined by the mapping table. Make sure you have inserted a sufficient number of reference points and make good association of these points using the calibration tool.
- 5. Currently the associated event trigger by Auto Tracking is not supported on VAST. The associated event triggering is configured through a web console with the fisheye camera:

General settings	Import/Export file	5		
Enable Panora	amic PTZ			
Enable Auto tr	acking			
Auxiliary c	amera informati	on		
IP addr	ess:	172.16.90.172	1	
HTTP p	ort	80		
Controller came	era account			
User na	ime:			
Passwo	ord:		3	
				Test
Associate the a	uto tracking event w	th the auxiliary camera's m	anual trigger 📃 1	2 3
				Save

5-1. You should then create an event setting using the manual triggers as triggering sources.5-2. When Auto Tracking takes place, the pre-configured event settings on the speed dome camera can take associated actions, e.g., taking a snapshot, recording to SD, or triggering the DO pins.

- 6. The Panoramic PTZ function is currently not available on the Matrix or web console mode in VAST.
- 7. If the interactive camera pairs (Panoramic PTZ cameras) are managed under VAST substations, then all of the VAST instances, such as the primary VAST server, the substations, and the client side must be running the revision that supports P-PTZ.

### Panoramic PTZ - Event Trigger

The P-PTZ-related event types include: "triggered" and "returned to normal" when Auto Tracking takes place. Below are the configurable options with the event configuration:

 When configuring a recording schedule, the Auto Tracking actions can be selected as one of the event triggers. The configuration is found in Configuration > Station Settings > Recording Schedule Settings.

ime Frame List						Save es Template
						Recording Settings
Time Frame	Rule					
Always		(Day-based)				Recording Mode: Event
PPT2	Weekly Set	ting (Day-based)				Triggers
						Visition VityA Vipa
						ETampering MP-P12
						Digital Input
						ETrigger State Enormal State
amera List			_		The second se	etwori Camera
	Address	Group	Schedule		20x Zoom M	lega-Pixel Speed Dome Network Camera
Contraction of the second second		Default0roup	Yes		Mega-Ptxle N 20x Zoom 1	etwork Canera 090p Speed Dome Network Camera
Mega-Pixel Ne		DefaultGroup	Ves			
Mega-Pixel Ne 20x Zoom Me Mega-Pixel Ne	192.168.6.101 192.168.6.127	DefaultGroup DefaultGroup	Yes		1000000	
Name Mega-Pixel Ne 20x Zoom Me Mega-Pixel Ne 20x Zoom 108	192.168.6.101 192.168.6.127	DefaultGroup			2	
Mega-Pixel Ne 20x Zoom Me Mega-Pixel Ne	192.168.6.101 192.168.6.127	DefaultGroup	Yes	0	a	
Mega-Pixel Ne 20x Zoom Me Mega-Pixel Ne	192.168.6.101 192.168.6.127	DefaultGroup	Yes		a	

2. When Auto Tracking is enabled, its actions are considered as one of the system event types. In Configuration > Event Management, P-PTZ is configurable as a Trigger Type in Event Management > New Event > Trigger. This event trigger can be associated with different actions, such as Email, recording, moving to a preset location, GSM message, HTTP, Client notification, etc.

Event Ma	nagement		11 and		💙 New Event				Σ
event is it an exist vent Lis	ting one.	n of triggers, actions	s, and schedule. You	i can add a new event or	General >>	Trigger	>> Action >> Schedule	>>	Detai
Enable	Name	Triggers	Actions	Schedule			ant X	D	
0	Event 1	DI-2 (Trigger)	Send client noti	Always		💙 Add Eve	ent 🔼		
Ō.	Event 2	p.ptz (Trigger)	Start to record	Always		Add Event	by: 🔘 Device 🛛 💿 Trigger Type		
0	Event 3	P-PTZ (Trigger)	Send client noti	Always		Category:	Camera Events 🔹		
						Type:	Motion -		
							Motion DI-1		
							_DI-2 _DI-3	J Rer	nove
				1			DI-4		
Now	Edit	Remove	Dutal >>	Close			DI-5 DI-6		
			(Contraction)	()		Ba	DI-6 DI-7		Cancel
							_DI-8 DO-1		
							DO-2	-	
							DO-3 DO-4		
						-	DO-5 DO-6		
					Time Zone	Туре	DO-6 DO-7		
							DO-8 Video Loss/Restore		
							PIR		
							Tampering Temperature		
							IR		
							IVA - Moving Object IVA - Loitering Detection		
							IVA - Comera Tampering P-PTZ		

Auto Tracking can also function as a Device type in the Event Management configuration.

V Trigger list
Select the trigger(s) from the following list.
□ VVTK_Station1(127.0.0.1)
🖶 🖂 💷 Mega-Pixel Network Camera(192.168.6.228)
🗌 💭 🥌 Motion
🗖 🥌 DI-1
🗌 🗁 Tampering
🖶 🗁 🗖 🌌 20x Zoom Mega-Pixel Speed Dome Network Camera(192.
📄 🐨 🖉 🕙 Mega-Pixel Network Camera(192.168.6.127)
🗹 🧼 Motion
🛛 🗹 🍚 DI-1
DO-1
Tampering
🗑 — 🗖 譻 20x Zoom 1080p Speed Dome Network Camera(192.168.
ⓐ□  Mega-Pixel Network Camera(192,168.6.228)
□ ND8401(192.168.6.128)
4
OK Cancel
(I)

Once triggered, the P-PTZ Trigger and P-PTZ Normal events will create two short videos for a length of 30 seconds.

Note that the P-PTZ event is not triggered by Panoramic PTZ control on the view cells, it is triggered by Auto Tracking. Auto Tracking takes place when a moving object enters the preconfigured region of interest. Please refer to the **Panoramic PTZ Installation Guide**.

3. Events triggered by Auto Tracking are also recorded into system logs.

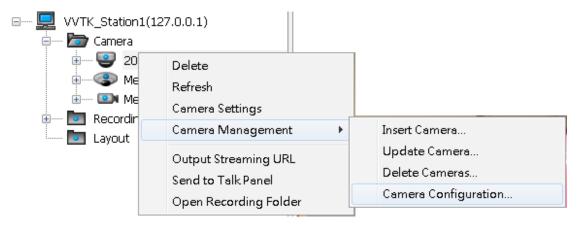
	1	Carlos Ca	-			
and the second second						
			-			
				and in		
					2013/6/16 下午 08:15:3	17
					COURSES AND	4.1
Instant Playhack	Source	Time	Time Zone	Type	Description	
	Source	Time 2013-06-19 15:41:47.087	Time Zone	Type P.PT7	Description	
Instant Playback	SF8172	2013-06-19 15:41:47.087	+08:00	P-PTZ	Normal	
	SF8172 IP7160	2013-06-19 15:41:47.087 2013-06-19 03:41:43.821	+08:00 +08:00	P-PTZ Motion - Window 1	Normal 13%	
Instant Playback	SF8172	2013-06-19 15:41:47.087	+08:00	P-PTZ	Normal	

4. As the result, in **Playback** > **Event Search** panel, Auto Tracking (P-PTZ Trigger/Normal) is also a search condition.

Search Categoria	es: All Events 👻
Video - Loss Video - Restore IR - Normal IR - Trigger P-PTZ - Trigger P-PTZ - Normal	
Add	Remove
Time Zone:	iMT+08:00 Beijing, Chongging, Hong Kong, Kuala 💌
🗹 Start Time:	
2013/7/3	13:52:05
End Time:	
2013/ 7/ 9	14:52:05
Display in Nev	v Result List Search

### **Enable or Disable the Panoramic PTZ Functions**

You can manually enable or disable the Panoramic PTZ function in **Configuration > Camera Management > Camera Configuration**:



- 1. Select the fisheye camera by a single click, and then open the panoramic PTZ panel from the tabbed menu.
- 2. You can enable or disable the panoramic PTZ or the Auto Tracking functionality using the checkboxes.
- 3. Click the Save button, and the saving progress window will prompt.

mera List	Midaa	1					1
	Video	Audio	Remote Focus	NTP Settin	ngs    H	Panoramic PT7	
VVTK_Station 1(127.0.0.1)	Video s	tream:			Stream	m 1	
Mega-Pixel Network	Codec	tuner			_		
Mega-Pixel Network	couec	type.			SVC		
Mega-Pixel Network	Frame	size:			1056>	(1056	
Mega-Pixel Network							
🕲 Mega-Pixel Network	Maxim	um frame	rate:		15 fps	s	
	Video (	uality:		1	Const	ant bit rate 🔻	4 Mbps
					Const		4 MDps

4. Click Close to end the configuration process.

# Appendix B ONVIF Support

ONVIF is supported in an environment where the VAST server can detect and record video streams from the cameras made by other manufacturers.

The following are supported.

ONVIF camera icons on the device tree.

Brand name selection is also available on the configuration window.

Camera List	Brand: V	TVOTEK T		
WTR: Station1(127.0.0.1)     W 20k Zoom Moga-Pikel Soc     Winga-Pikel Network Came     Winga-Pikel Network Came     Winga-Pikel Network Came     Winga-Pikel Network Came	Module: Camera Name: Address: 1	NVIF 121 Aut 92 168 6 219	20 M I I I	OTEK
	MAC Address	9332		Connection Test
	User Name: Configuration Prot Streaming Protoci Initial Viewing Stre	tocol: (HTTP +) ol: (TCP +)	Password: Configuration Port: Channel:	80 ** 1 **
	Automatically ad	id camera into recording	S11	• Oose

- 2. Insert/update/delete camera from the device tree.
  - 2-1. Detect ONVIF cameras.
  - 2-2. Connection test.
  - 2-3. camera password authentication.
  - 2-4. Supports HTTP and HTTPS streaming protocol.
  - 2-5. Supports multiple streaming.
- 3. Live view/recording/playback.
  - 3-1. Audio G.711 support.
- 4. Mechanical PTZ support with the exception of Focus, Iris, Pan, Patrol, and preset location operation.

#### Limitations:

The following limitations apply to ONVIF cameras made by other manufacturers. Some features may be implemented in later releases of software.

- 1. Users should ensure that your other brand cameras support ONVIF.
- 2. The connection statuses of the other brand cameras will not be displayed on the device tree.
- 3. For mechanical PTZ cameras, the Focus, Iris, Pan, Patrol, and preset locations functions will not be supported. The associated buttons and control elements on the UI screen will not be disabled.
- 4. Does not support the Batch Insert Camera function.
- 5. Does not support Camera Configuration.
- 6. Does not support Active Adaptive Stream (AAS) function.
- 7. Does not support Event related functions, including event recording, event management, instant playback, event search, etc.
- 8. Does not support camera DI/DO.
- 9. Does not support Two Way Audio.
- 10. Does not support Auto Stream Size.
- 11. The ONVIF user authentication (account and password) may not comply with those configured via a web console.
- 12. The number of multiple profiles can vary.
- 13. The number of accessible profile can vary. Some might have only one profile to be connected.
- 14. Does not support Click on Image.

## Appendix C Support for Digital I/O Modbus TCP Modules

The VAST revision 1.9, supports Advantech's I/O Modbus TCP Modules 6000 series. The VAST server can receive digital inputs and trigger digital outputs via the I/O modules.

The Advantech I/O modules come with configuration utilities, such as the Adam/Apax.NET. Connect the DI/DO wires to the module and the Ethernet wire from the module to the local network.

Proceed with the following to configure the I/O module:

1. Use the Search function to locate the I/O module on the network.

🔀 📈	anteo	h Ad	lam/Apa	x .NET Utility (Wi	n32) Vers	ion 2.05.06	-	
File	Too	ols	Setup	Help		_		
8 🖪		Sea	arch Devi	ce				
	Wirele	Add Gra Ter Prir Ma Ma Ma	d Device oup Conf minal fo nt Screen onitor Str onitor Pe	s to Group iguration r Command Testi eam/Event Data er to Peer L IO Data Messag AX	ng	ting Network setting: MAC address: IP address: Subnet address: Default gateway:	00-D0-C9-F0-EF-3B 172.18.100.22 255.255.0.0 172.16.0.1	Apply change

2. It is recommended to configure a static IP for the I/O module.

3. You may then test the DI/DO device connectivity using the software utility.

E < 1 ≠ 5 ≥ 6	-						
COM1	ADAM-6052 16-ch source type DiO module						
Ethemet	Cheanel setting   Modbus						
169 254 45 127 192 168 6 139	212	DIG 🕥	D04				
<ul> <li>Interference</li> <li>Inter</li></ul>	EL1 🕞	207 3	DO 5 C 100				
0 192.168.6.135 Others		D00 🕥 🗂 FXV	DO 6 FEV				
ADAM4500_55103ecies		DO 1 💮 🗂 REV	D07 🕜 🗂 PSV				
Wasles: Senor Networks		DO 2 C RZV					
	ms 💿	DO 3 🖉 🖉 REV					
		V if the module's WDT is enabled and if g itsis, FSV unchecked - Logic Low State. If 12PAOCL WDT	ets triggerendApply FSV				

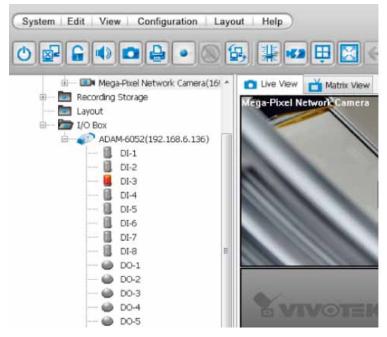
4. To configure the I/O modules in VAST, open the **Configuration** > I/O Box Management > Insert I/O Box Device window.

System   Edit   View	Configuration   Layout   Help )	
Ů፼₽₽●	Camera Management   Station Management	∎⊠<→ᡨ
UVTK_Station1(12	I/O Box Management  User Management Association Management Alarm Management	Insert I/O Box Device Update I/O Box Device Delete I/O Box Devices
⊕ 👀 Mega-Pi ⊕ 🔽 Recording Sto Layout	Virtual Matrix Management	
I/O Box	Video Enhancement	

5. Select the Module model name, enter IP address, User Name, Password, and then click the Insert button.

0 Box List					
VVTK_Station1(127.0.0.1)	Brand:	Advantech +			
Contraction of the second s	Module:	ADAM-6052 •			
	Device Name:	ADAM-6052			
	Address:	192.168.6.136	Port:	502	*
	User Name:	admin			
	Password:				
	Number of DI:	θ	DI Name:		7
	Number of DO:	9	DO Name:	1	

6. Click Close to close the window. The I/O module and its DI/DO entries should be listed on the device tree under the I/O box sub-directory. As shown below, once a DI is triggered from the I/O module, the associated DI icon will be lighted. Audible notification can also be heard from the VAST server.

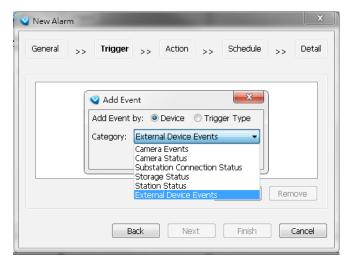


7. You can also double-click on a DO icon to manually trigger the digital output. Double-click again to cancel the trigger.

System   Edit   View	w Configuration La	ay
Ů₽₽₩		
🗄 🚥 💷 Mega	a-Pixel Network Camera(169	*
🗄 🔤 Recording	Storage	
🔽 Layout		
🖮 🗁 I/O Box		
	M-6052(192.168.6.136)	
- <u> </u>	DI-1	
- <u> </u>	DI-2	
— <u>U</u>	DI-3	
	DI-4	
	DI-5	
- <u> </u>	DI-6	
- <u> </u>		
U	DI-8 XZ	Ε
	DO-1	
	DO-2	
	DO-3	
	DO-4	
	DO-5	
	DO-6	
	DO-7	
····· 🍅	DO-8	
		Ŧ
<	4	

8. You can also implement the digital inputs and outputs from the I/O module in your alarm setting. For example, a DI can be wired to an intrusion detector; and when the DI is triggered, an associated DO can be used to sound an alarm.

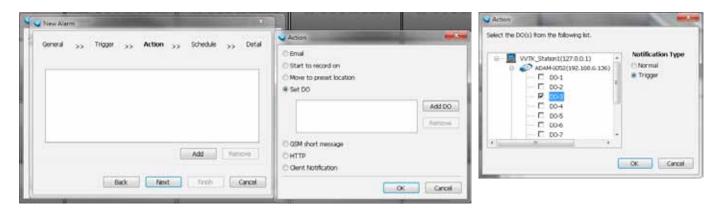
To configure the Alarm setting, enter the **Configuration** > **Alarm management** window. Configure a new alarm. On the Trigger window, select the Trigger Category as **External Device Events**.



9. The DIs and DOs on the I/O module will be listed. You can then select one or more DIs as the triggers.

	🖌 Trigger list	
	Select the trigger(s) from the following list.	
	⊡ 🗹 📃 VVTK_Station1(127.0.0.1)	
	🔽 🥌 DI-1	
	🗔 🔴 DI-2	
	🗹 🧼 DI-3	
	🗹 🥚 DI-4	
	🗖 🔴 DI-5	
	🗖 🥚 DI-6	
	🗖 🥌 DI-7	
	🗖 🥌 DI-8	
	🗖 🥌 DO-1	
	🗖 🥌 DO-2	
	🗖 🥌 DO-3	
	🗖 🥌 DO-4	
	🗖 🥌 DO-5	
	🗖 🥌 DO-6	
	🗖 🥌 DO-7	
		l
	OK Cancel	1
Ľ		1

10. On the Action panel, you can select to trigger DOs, for example, as the reacting actions



Note that once a DO is triggered, you should manually disable the DO.



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



## **Appendix D Other Parameters**

Disable background decode:

Administrators can choose to disable the background decode for other view cells when entering a single view of a specific camera. This can help reduce the CPU load on a server short of system resources.

This function can be evaluated in two aspects:

- 1. For a server with abundant system resources, there is less stress when disabling and enabling background decode. When a user leaves a single view and enters a multi-cell view, the background decode starts again, and a powerful server handles this process more smoothly.
- 2. For a server with less resources, this feature can reduce CPU load. However, latency can occur during the process when returning from a single view back to a multi-cell view.

This feature is enabled by editing the ClientSetting.ini file in C:\ProgramData\VIVOTEK Inc\ VAST\Client\LiveClient.

64	📮 [GeneralSetting]
65	AutoFullScreen=0
66	AutoAddCam=1
67	SSE=1
68	EnableRTSP=0
69	RTSPPort=4543
70	StreamingRelay=1
71	SubscribeCamera=0
72	SortCamera=0
73	LiveEvent=1
74	LocalAlert=0
75	EventWindowType=0
76	RotateSec=10
77	AutoRotate=0
78	DeInterlace=0
79	SyncAudioVideo=0
80	AutoStreamSize=1
81	AutoStreamSizeMode=0
82	InstantReplay=1
83	DefaultPlaybackLength=1
84	BufferTime=0
85	GDIOnly=0
86	GPUDecode=0
87	GPUDecodeMaxNumber=0
88	MinPTSpeed=-1
89	MaxPTSpeed=-1
90	DisableBackgroundDecode=1