Central Management System

User’s Manual

Version 3.6.0

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1. Overview

The Central Management System (CMS) offers a simple and centralized monitoring interface for the video surveillance equipments. It gives the user access to monitor multiple DVRs, and allows the user to simultaneously monitor 64 sites per group (up to 10 groups) within several clicks.

Features:

- **Monitor Multiple Sites** - Supports up to 10 groups, each group can add up to 64 sites
- **Alert Function (LAN Only)** - Sends live/event video clips and messages to the local computer from all connected DVR(s)
- **Connected Configuration** - Configures the settings of the connected DVR(s)
- **Remote Playback** – Allows the user to view recorded video stored in the connected DVR(s)
- **HDD Information** – Displays information of all disk drives that are being used on the local computer
- **Dome Control** - Remotely operates the speed domes via the Internet
- **Search (Devices)** - Searches the LAN network for any available connected DVR
- **Search (Video)** - Searches the connected DVR for any recorded video
- **Record** - Records live or playback videos to the local computer

1.1 System Requirement

The following chart shows recommended computer system:

Operating Systems	Windows XP, Windows Vista	
CPU	Minimum: Pentium 4 2.0GHz	Recommended: Pentium 4 3.0GHz
RAM Memory	Minimum: 1GB (Connects ≦ 32ch)	Recommended: 2GB (Connects 64ch)
Bandwidth	Minimum: 256K	Recommended: 1536K
HDD	Minimum 80GB HDD space is required if there is need to record video to the local computer.	
Video Card	Recommended: Pre-installed with more than 64MB RAM	
Tested Connection Extreme	CPU: Intel(R) Core (TM)2 Quad CPU Q6600 @2.4GHz, RAM: 2GB, OS: WinXp, Display: NVDIA GrForce 8400GS 512M, Ethernet: Gigabit LAN, HUB: Gigabit HUB With the above system, the tested PC can stably connect up to 512 channels, which is the same as 32 units of 16-ch DVRs. **NOTE:** This system is required when 16 Megapixel IP cameras with 1280x960 resolution are going to be connected.	

NOTE: If the operating system is Windows Vista, some functions (such as Record, Auto Reboot, etc) will not work properly due to User Account Control (UAC). Follow steps below to solve this problem.

Step 1. If a previous version of CMS is installed, export setting files of CMS servers (1~4) before installing the new version CMS.

Step 2. Due to UAC, user account in Windows Vista cannot properly run applications that will write in "C:\Program Files\" folder. Therefore, CMS will be installed in "C:\" folder instead.

Step 3. Once the new version CMS is installed, import the setting files back to CMS servers (1~4).

1.2 Supported IP Cameras

The following chart shows the models of IP cameras recognized by CMS:

Brand/Model	Streaming Protocol	Video Stream Format	Audio Stream Format
DynaColor Video Server (D7521)	HTTP	MPEG4 / MJPEG	MS-ADPCM (2-Way Audio)
DynaColor MegaPixel IP Camera (NH Series)	RTP+RTSP (Intranet)	MPEG4 / MJPEG	g.711 a-law / g.711 u-law (2-Way Audio)
	RTP_Over RTSP (Internet)	MPEG4 / MJPEG	g.711 a-law / g.711 u-law
DynaColor (NW Series)	HTTP	MJPEG / H264	Adpcm / g.711 a-law / g.711 u-law
	RTP+RTSP	MJPEG / H264	g.711 a-law / g.711 u-law
ACTi	RTP+RTSP	MPEG4 / MJPEG	PCM
AXIS 200 Series	RTP/RTSP	MPEG4	Unsupported
VivoTek 7000 Series	RTP/RTSP	MPEG4	Unsupported

NOTE: Each group can only connect to at most 16 IP cameras.

2. Software Installation

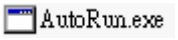
After acquired the installation file, follow the steps below to install CMS to the local computer.

Step 1. Double click the zipped file to unzip it.

Step 2. There are 3 ways to start the installation.

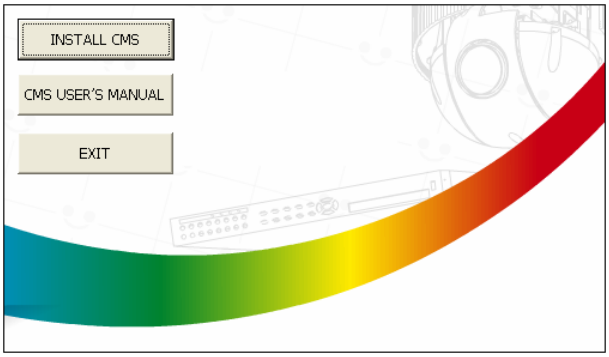
Option 1. After the zip file is opened, click on the Setup.exe file to start the installation.

Option 2. After the zip file is opened, click on the AutoRun.exe file to start the installation.

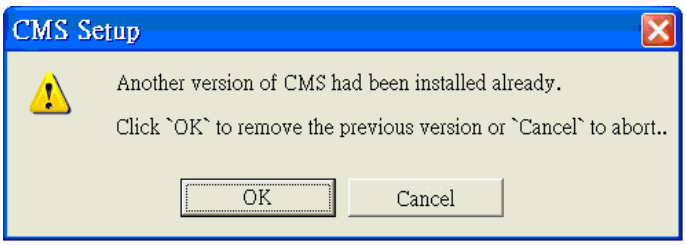


Option 3. If the program will be installed using the CD, the installation will run automatically when the CD is inserted into the CD-Rom.

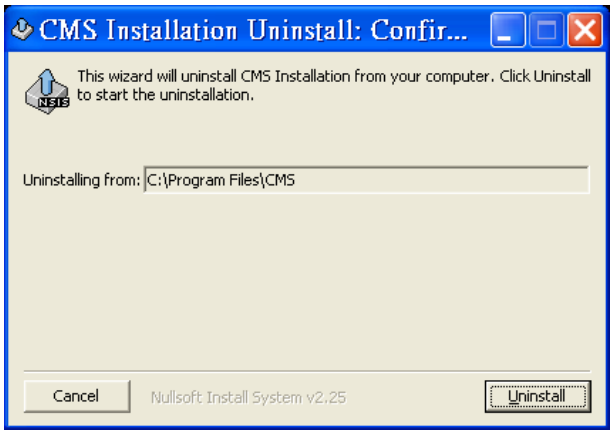
If the installation will be started either via Option 2 or Option 3 of Step 2, the <CMS Setup Menu> window will be displayed. Choose <INSTALL CMS> to start installing CMS. Choose <CMS USER'S MANUAL> to read the user's manual. Choose <EXIT> to exit the <CMS Setup Menu>.



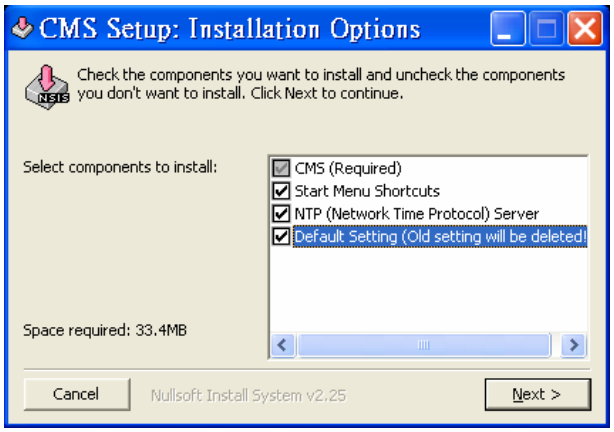
NOTE: If an older version of CMS had been installed in the local computer, a message box will be shown during the installation. Click <OK> to uninstall the previous version.



After clicking <OK>, an <CMS Installation Uninstall: Confirmation> dialog will be displayed. Click <Uninstall> to uninstall the older version and continue with the next step.



Step 3. Select the components that are going to be installed. It is strongly recommended to select the <Start Menu Shortcuts> to create shortcuts in the Start Menu and on the Desktop. Otherwise whenever the program is to be opened, it will have to be found under the path: "\CMS\EXE\CMS.exe". Click <Next> to go to next step.

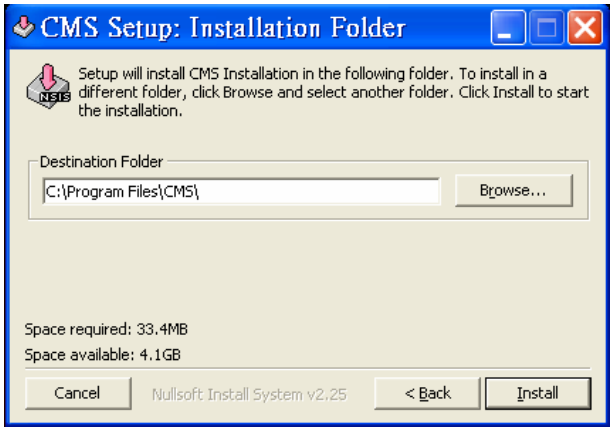


The components of CMS Installation Setup:

☑ CMS (Required)	: CMS main program (Default).
☑ Start Menu Shortcuts	: Check to create shortcuts in the Start Menu and on the Desktop.
☑ NTP (Network Time Protocol) Server	: Check to install the NTP (Network Time Protocol) Server.
☑ Default Setting (Old setting will be deleted!	: Check this box to load default setting, or uncheck it to load the old setting of previous installed CMS.

Step 4. CMS main program will be the first program to be installed. Choose a

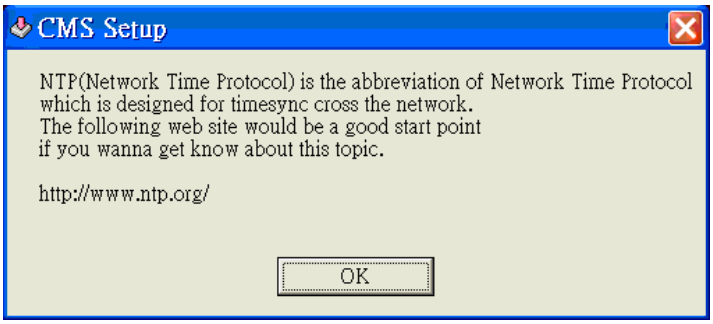
folder to install CMS or it will be installed to the default destination folder "\CMS\". Click <Install> to start the Installation; or click <Back> to go back to the previous step.



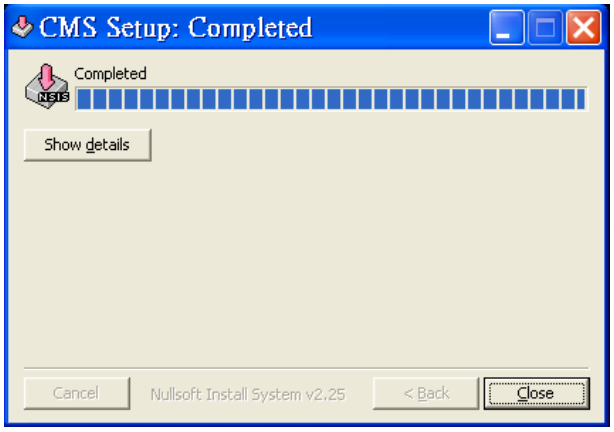
NOTE: If the PC has not installed "Microsoft Visual C++ 2008 SP1 Redistributable Package (x86)", an alert message will be shown as below. Click <OK> and the installation will be terminated. Access the following link: http://www.microsoft.com/downloads/details.aspx?FamilyID=a5c84275-3b97-4ab7-a40d-3802b2af5fc2&DisplayLang=en and click <Download> to download and install it.

Step 5. The NTP Server will be the next program to be installed. The NTP Server enables the local computer, which is running CMS, to become a central NTP Server for the connected DVR(s) so the time for the local computer and the connected DVR(s) is synchronized.

Click <OK> to start installing the NTP Server.



Step 6. Click <Close>, and the Software Installation is complete.



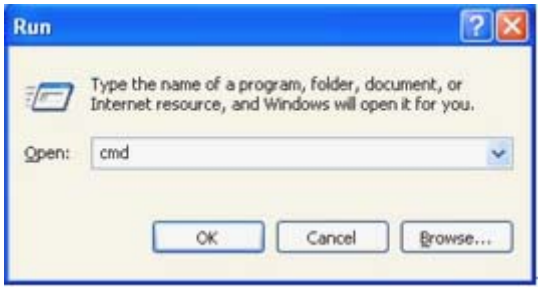
NTP Service (Server)

The NTP Service (Server) enables the local computer, which is running CMS, to become a central NTP server for the connected DVR(s) so the time for the connected DVR(s) and the local computer is synchronized.

To do so, the IP address of the local computer is needed.

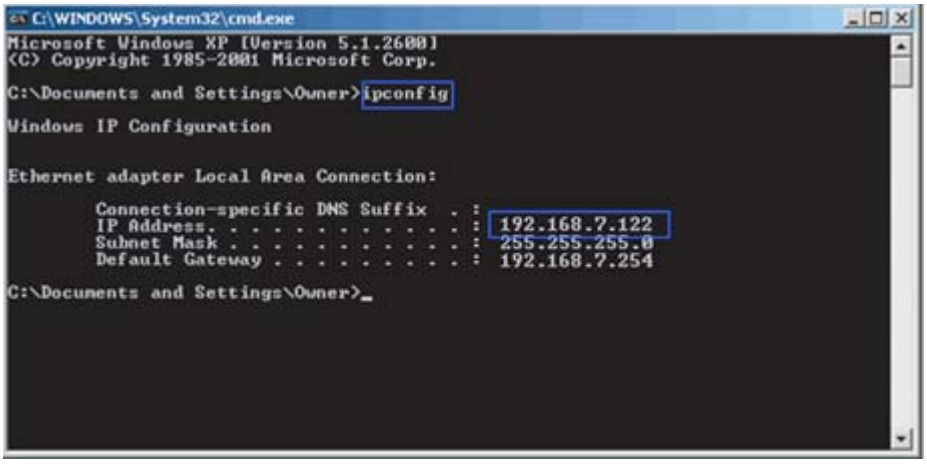
Go to **Start** menu, select **Run**.

Type in **cmd** and click OK.



Type in **ipconfig** to get the IP Address of the local computer. Write down the

IP address on a piece of paper for later use.



After the IP address is found, setup the connected DVR(s).

First, go to <Main Menu> → <System Setup> → <Date/Time> → <Time Zone> to setup time zone. To find out the local time zone, please visit www.greenwichmeantime.com

NOTE: The <Time Zone> must be set or the <Network Time Protocol Setup> will not be accessible.

After entered the local time zone, the <Network Time Protocol Setup> option will be accessible. Go to <Main Menu> → <System Setup> → <Date/Time> → <Network Time Protocol Setup>, and the following menu will be displayed.

Network Time Protocol Setup	
1. NTP Server	time.nist.gov
2. Automatically Time Sync	ON
3. Manually Time Sync	No

In this example, the NTP server should be set to "192.168.7.122" which is the IP address of the local computer. After the NTP server is set, select <Manually Time Sync> to sync the time with the local computer. The time sync can also be updated periodically. Select 'ON' for <Automatically Time Sync>, and the time will be automatically synced once an hour.

3. Software Upgrade

CMS software can be upgraded automatically or manually. Refer to the following sections for details.

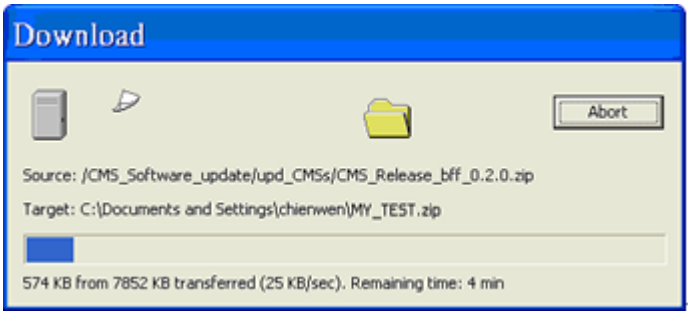
3.1 Automatic Software Upgrade

To enable automatic software upgrade, right click on CMS icon in the system tray and check "Auto Upgrade". If automatic software upgrade is enabled, CMS will connect to the FTP Server and check for upgrade once a month. If no upgrade is available, CMS will continue normal process. If upgrade is detected, please follow the steps below to proceed.

Step 1. A message box will pop up to inform that there is upgrade available.

Click <OK> to download the upgrade software and continue to the next step. Otherwise, click <Cancel> to abort and continue to normal CMS process.

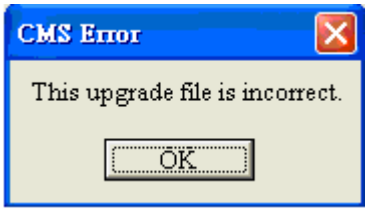
Step 2. Choose a destination folder to save the file. Then a window will pop up and show the downloading status.



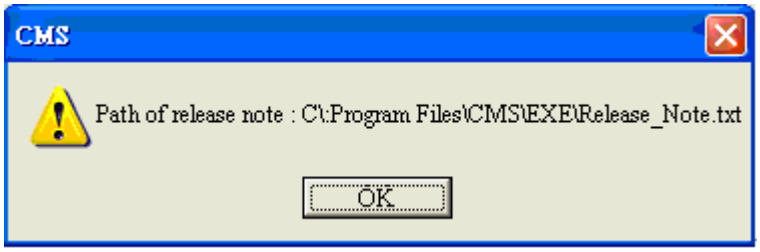
Click <Abort> to terminate the download and CMS will be started as usual.

Step 3. When the download is completed, the installation of the new version of CMS can be started following the same procedures described in section ***Software Installation***.

NOTE: If the upgrade file is not completely downloaded, an error message will be displayed as below.

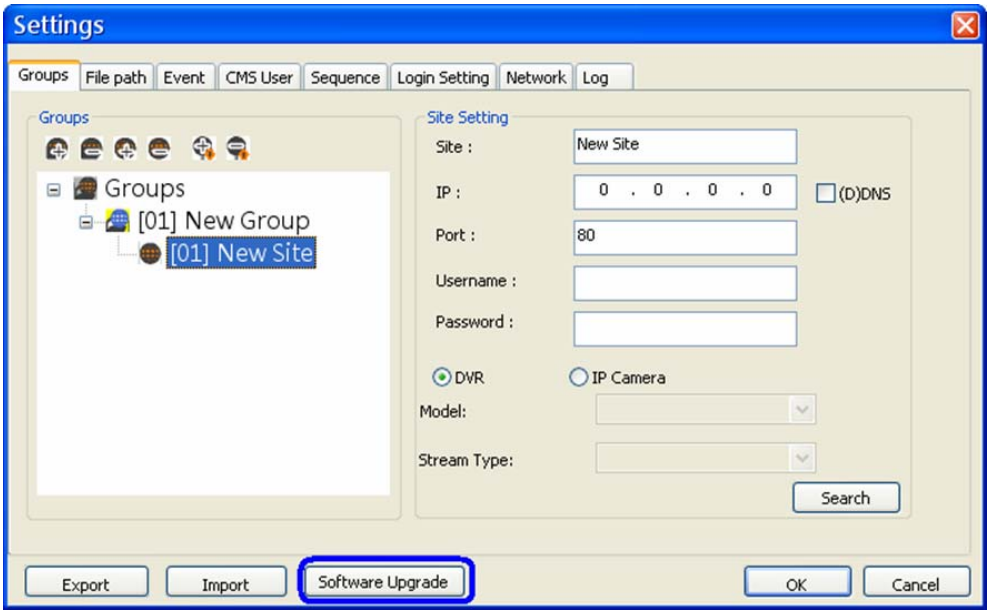


NOTE: A release note will also be downloaded together with the setup file. The following message will be displayed to show the file path where the release note is saved.



3.2 Manual Software Upgrade

To manually upgrade software, click on the <Setting> button and click on <Software Upgrade> at the bottom. Then follow the steps in the previous section to complete the download and installation.



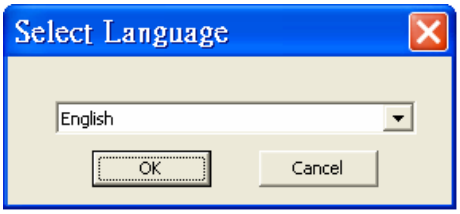
4. Start Up CMS

There are 3 ways to start CMS. Note that method A and B are only available if the "Start Menu Shortcuts" component is installed. Please see section ***Software Installation*** for more information.

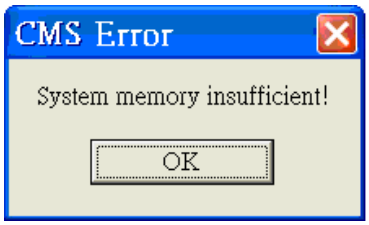
Method A: Click Start menu and select Programs; find "CMS" from the listed programs.
Method B: Double click on the shortcut icon on the desktop.
Method C: Go to "\CMS\EXE\" and double click on CMS icon.

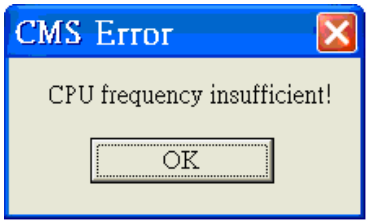
4.1 Starting Up

If CMS is started for the first time, select a desired language for the interface. The available languages are listed in the scroll box. Click <OK> to confirm the selection.



If the system memory or CPU frequency is less than the requirement, the error message shown as below will be displayed.

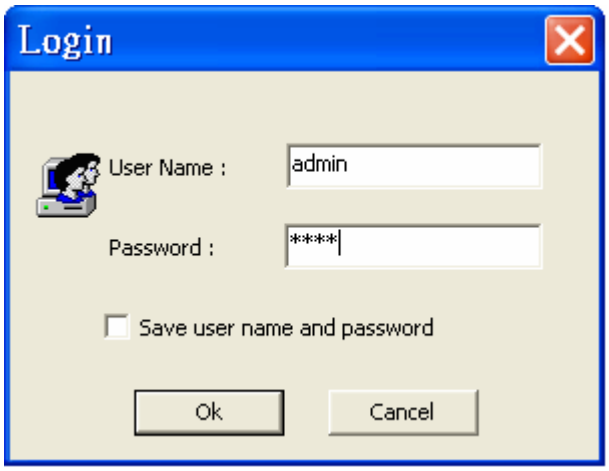




4.2 Login

The default User Name & Password are listed below.

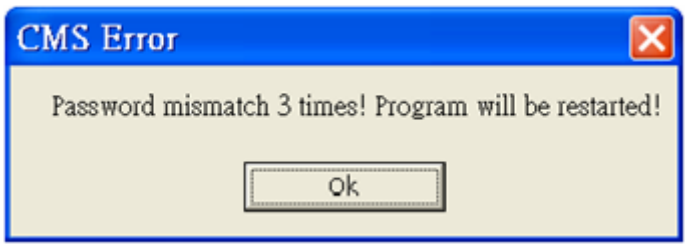
User Name: admin
Password: 1234



Check <Save user name and password> to save time from entering username and password every time CMS starts. Click <OK> to login.

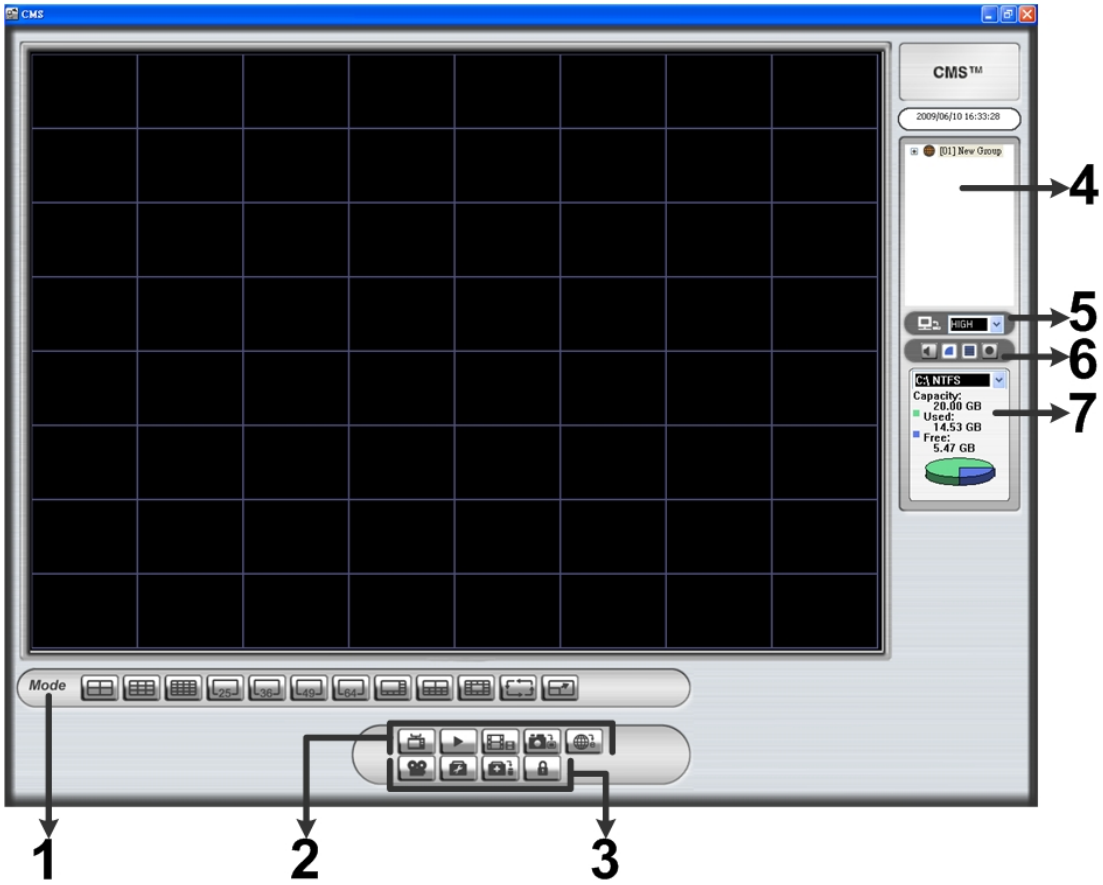
The username and password accounts can be added or removed under the <CMS User> tab in <Setting> configuration window. Refer to the *CMS User* section for more information.

NOTE: If the wrong username or password is entered for 3 times, the message below will be shown, and CMS will be closed automatically after <OK> is clicked. Restart CMS to enter the correct username and password.



5. CMS Main Window

After started up CMS, the main window of CMS will be shown as the figure below. The name of each button is indicated as follows.



1	Display Mode: 4-windows, 16-windows, 25-windows, 36-windows, 49-windows, 64-windows, 8-windows, 10-windows, 13-windows, Sequence, Full Screen
2	Left to Right: Live, Playback, CMS Player, Snapshot, Emap
3	Left to Right: Schedule Record, Setting, Health, Lock
4	Site Tree
5	Bandwidth
6	Left to Right: Audio, Smooth Adjustment, Deflicker, Recording
7	HDD Info

The usage and function of each button will be briefly described as follows.

Display Mode

Click on any <Mode> icons to view the **image** in a multiple window mode. The selections are 4-windows, 9-windows, 16-windows, 25-windows, 36-windows, 49-windows, 64-windows, 8-windows, 10-windows, and 13-windows. Refer to section ***Display Mode*** for more details on operation.

Click on <Sequence> to start displaying the sequence list. See section ***Sequence Display*** for more detailed information.

Click on <Full Screen> to extend the current viewing grids to full screen. Hit <Esc> to exit.

Live

Click on the <Live> icon to view the live video. Note that after viewing recorded video, this button needs to be clicked to switch back to the live mode.

Playback

Click on the <Playback> icon to view recorded video stored in the HDD of the connected DVR. Please refer to section ***Playback Recorded Video*** for more information about playing back the video.

CMS Player

Click on the <CMS Player> icon to start up CMS Player. CMS Player is an enriched version of the standard DVRPlayer. Please refer to the **Appendix A** for more information.

Snapshot

Click on the <Snapshot> icon to save a snapshot of the current window(s). Refer to section ***Take a Snapshot*** for detailed information.

Emap

Click on the <Emap> icon to open the E-Map program. The E-Map is a program that allows the user to illustrate the positions of the cameras on a self selected image.

Schedule Record

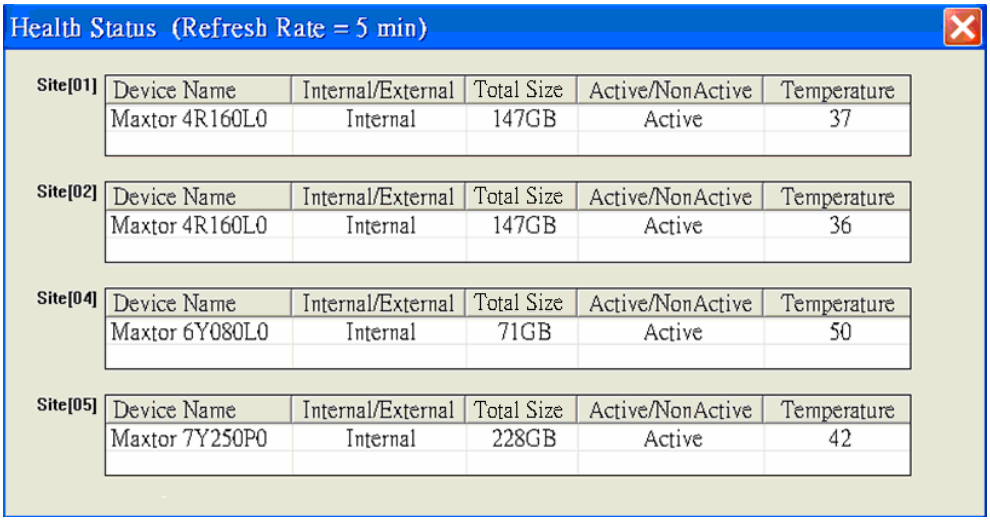
Click on the <Schedule Record> icon to schedule the recording time frame for the sites.

Setting

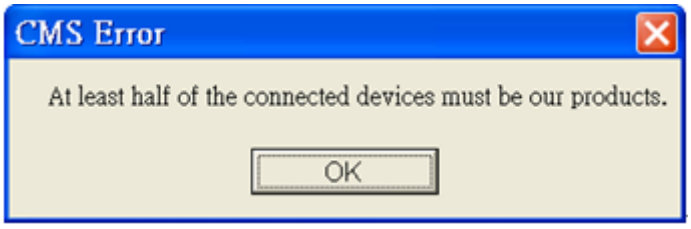
Click on the <Setting> icon to set up the configuration. Refer to section ***Configure the CMS*** for detailed information.

Health

Click on the <Health> icon to see the HDD information of the connected DVR(s). The data will be updated every 5 minutes. The following figure is an example. See section ***Health Function*** for more detailed information.



NOTE: If more than half of the connected devices are not our products, a warning message as below will be shown and CMS will be closed automatically.



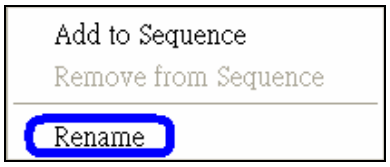
Lock

Click on the <Lock> icon to lock CMS to protect the works on CMS when users need to be away from the computer for a while. This function is the same as the computer's screensaver. See section ***Lock Function*** for more detailed information.

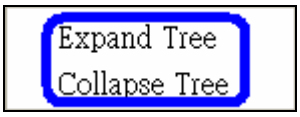
Site Tree

The site tree displays the site(s) that are currently being viewed. If the connection to a certain camera is failed, there will not be image displayed on its assigned grid. Right click on the "site" and click <ReConnect> to try to establish the connection to the site. The <DisConnect> option allows the user to only disconnect a certain site.

The user can also rename the camera directly by right clicking on the camera and selecting <Rename>. The new name will be shown on the upper left corner of the camera's assigned grid. Note that group and site cannot be renamed at the site tree.



By right clicking on the group icon, the options shown as on the right allows the user to expand or collapse the site tree.



Bandwidth

Click to choose bandwidth option. Choose <High> when the internet speed is fast; and <Low> when the network is congested.

Audio

Click on the audio button to switch on/off the audio.

NOTE: Switching ON/OFF the audio on CMS will not affect the audio setting of the connected DVR(s).

Smooth Adjustment

Click on the smooth adjustment button to switch on/off the smooth adjustment function. Switch on the function helps to give the image more sharpness.

Deflicker

Click on the deflicker button to turn on/off the deflicker function. Switch on the function helps to avoid gleaming of images.

Recording

Click on the recording button to start recording videos of all connected sites. The recorded data will be stored in the preset file path specified in settings.

HDD Info

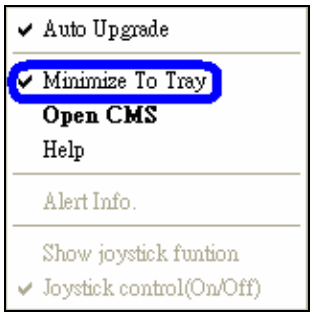
The pie chart displays the HDD information. This is especially useful when users use CMS to record the video to the local computer.

Scroll down the menu to see the information of all the HDD(s) installed on the local computer, such as C drive, D drive…etc. The blue part of the pie chart indicates the used space, and the yellow part indicates the available space.

The information will be updated every 30 seconds. If file circular is enabled, the circulation will as well be updated every 30 seconds.

5.1 CMS Icon in the System Tray

When CMS is started up, CMS icon will always be shown in the system tray. Right click on CMS icon and the menu items will be as shown on the right.



If <Minimize To Tray> is checked, CMS window will shrink to CMS icon in the system tray when it is minimized. The task bar button will also disappear.

To restore CMS window, click on CMS icon and the task bar button will appear again. Then click on the task bar button to maximize CMS window. Alternatively, right click on CMS icon and select <Open CMS> and CMS window will be restored.

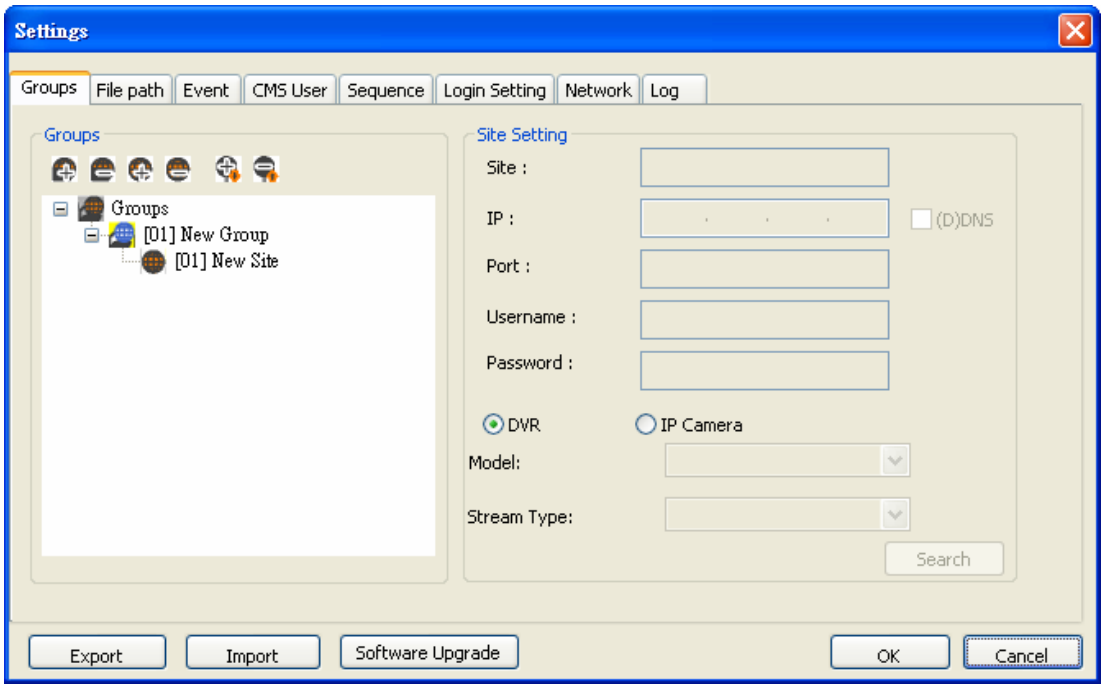
Right click on CMS icon and select <Help> will display CMS User's Manual.

Details of <Auto Upgrade> is described in section ***Automatic Software Upgrade***; <Alert Info.> is explained in section ***Alert Event***; <Show joystick function> and <Joystick control (On/Off)> are introduced in section ***Joystick Control Function***.

6. Configure CMS

CMS supports up to 10 groups, and at most 64 sites can be added to each group. The following sections guide users to setup CMS step by step.

Click on the <Setting> icon and a window as below figure will be displayed.



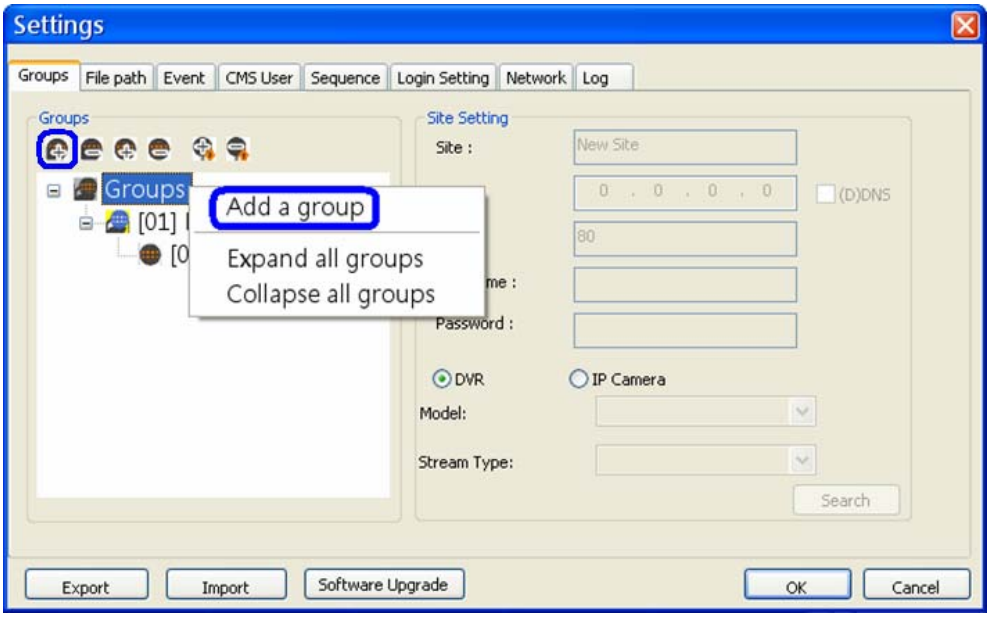
NOTE: The configuration in "Groups" tab and "Import" function will be unable to be saved when CMS is detecting network connection or is connecting to some sites. Error messages will be shown to inform the users.

6.1 Setup Groups

Up to 10 groups can be set in CMS. This section guides the user to add or remove a group, and also shows the user how to set "start group".

Add a group

Click button to add a group. Double click on the group to rename it.

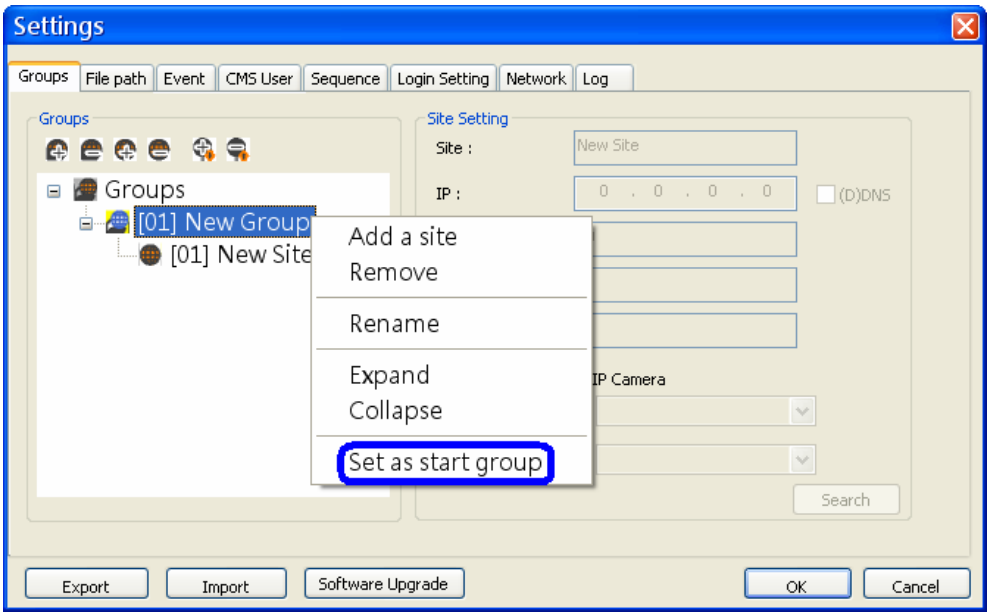


The other way to add a group is to right click on <Groups>, and select <Add a group>.

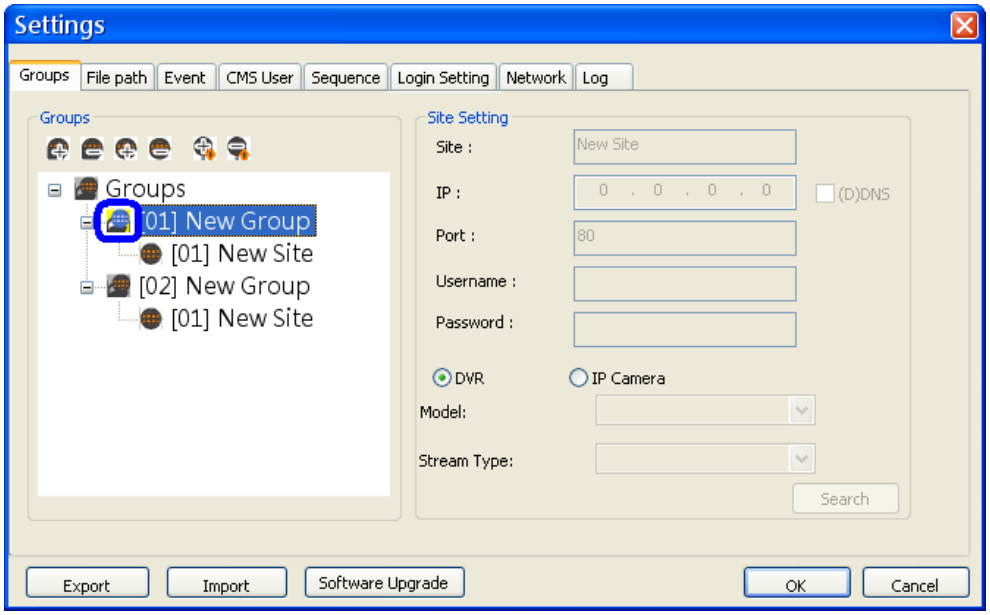
Set Start Group

"Start Group" is the group that will be connected after started up CMS.

Right click on the group to be set as "start group", and select <Set as start group> from the pull-down menu.

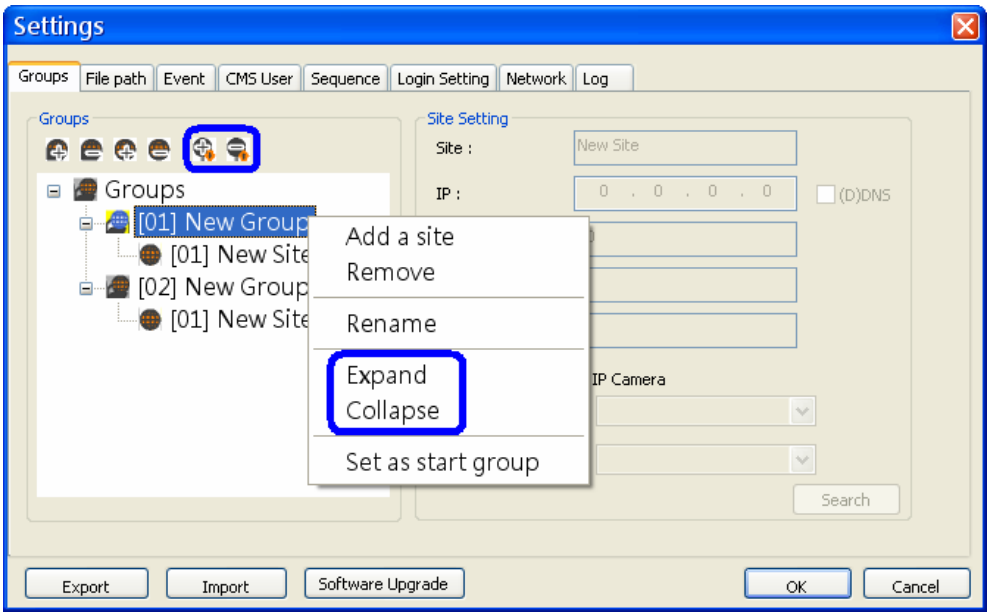


NOTE: If a group is set as the "start group", the icon will be changed as shown in the figure below.



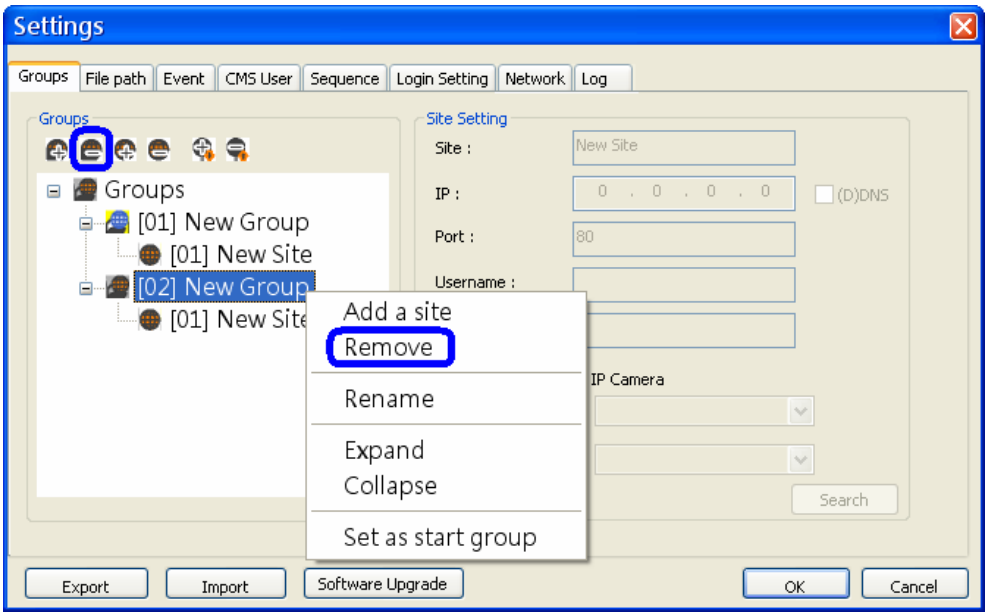
Expand / Collapse a Group

There are two ways to expand or collapse a group. One way is to use the buttons; the other way is to right click on the group and select <Expand> or <Collapse> from the pull-down menu.



Remove a Group

To remove a group, click on the group to be removed, and then click the button directly to remove the group. The other way to remove a group is to choose <Remove> after right clicked the group.



6.2 Manage the Sites

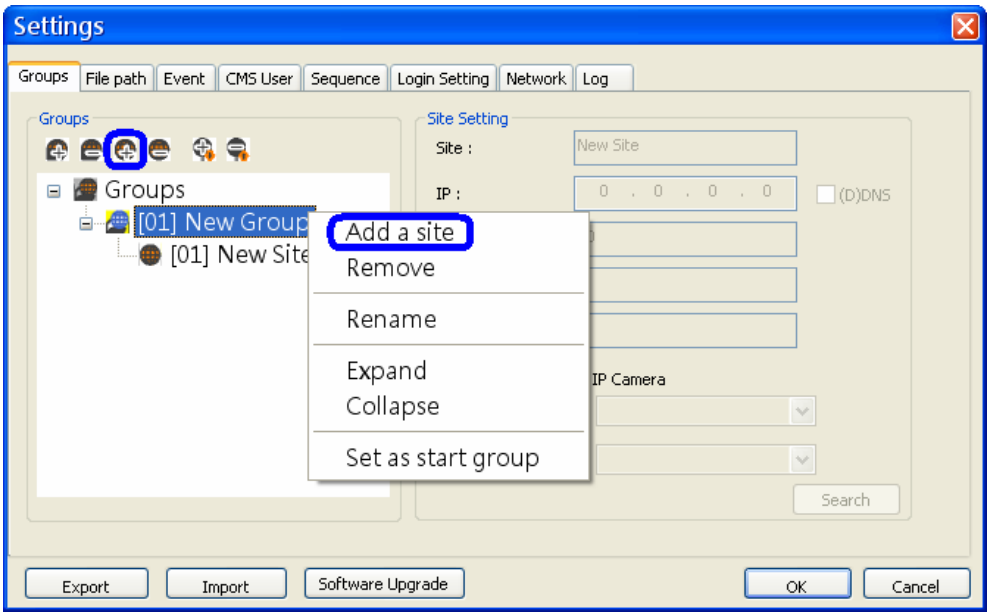
The following sections are instruction of the management of the sites, including add or remove sites and configuration.

6.2.1 Add/Remove a Site

This section describes how to add or remove a site. Up to 10 groups can be created with a capacity of 64 sites.

Add a site

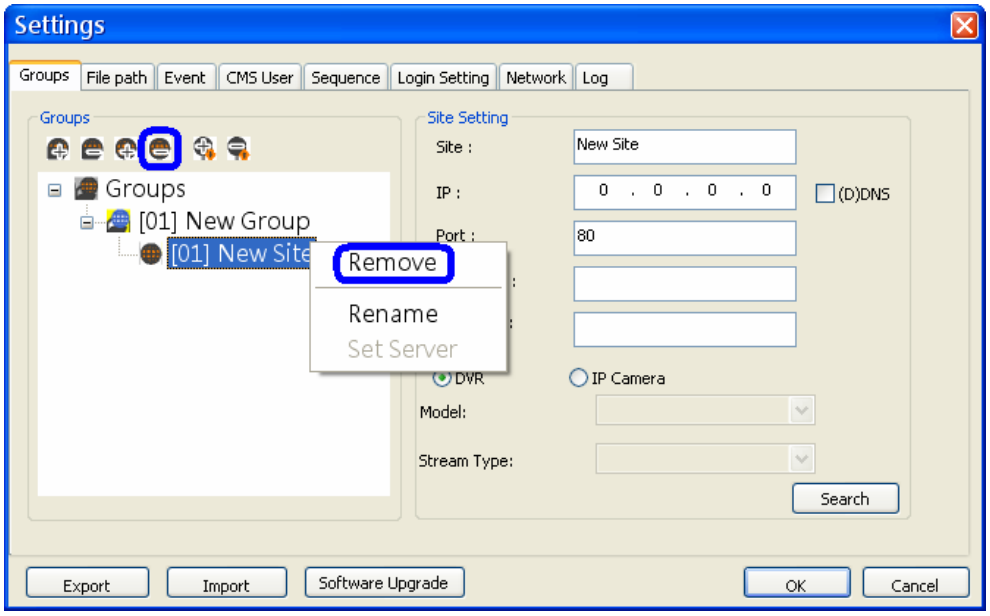
Choose a group to add a new site. Click the button to add a site to this group. The next section will show how to setup the site step by step.



The other way to add a new site to a group is to right click on the group, and select <Add a site>.

Remove a site

To remove a site, click on the site that is to be removed, and click the button directly to remove the site.



The other way to remove a site is to right click on the site, and select <Remove> from the pull-down menu.

A new site can either be a DVR or an IP Camera, and the number of sites equals to the number of the DVRs and IP Cameras. The following sections will show how to setup configuration of the sites.

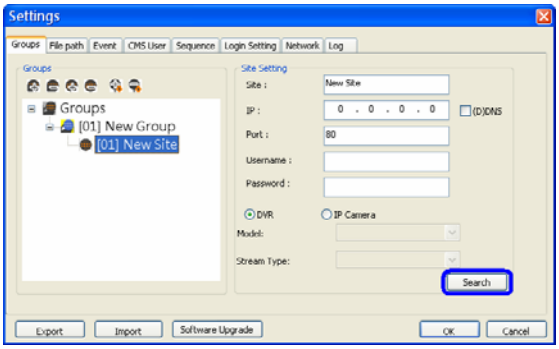
6.2.2 Setup the Site via Device Search

There are two ways to setup a site. The simple way is via Device Search.

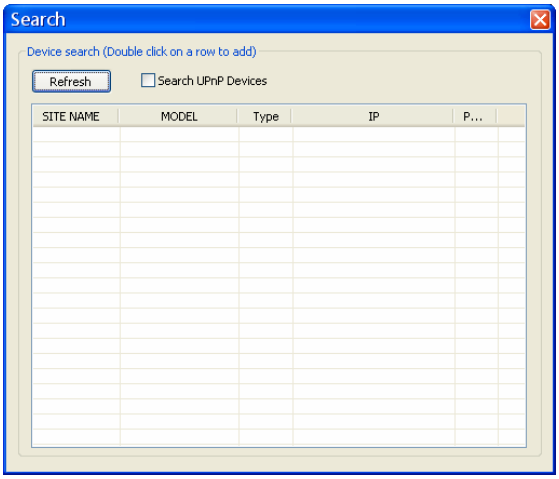
CMS is able to search for the IP address of the DVR(s) or IP Camera(s) connected to the LAN. The ports used for device search are 6666 and 6667. Please make sure that these two ports are not in-use nor blocked by firewall or virus scan software.

Follow steps below to search for DVR(s) or IP Camera(s):

Step 1. If there is a LAN network, CMS can search the LAN network for IP address of available DVR(s) and IP Camera(s). Click the Search button (**on the bottom right**) to open the Search window.



Step 2. Click <Refresh> to find the IP address of DVR(s) or IP Camera(s) available in the LAN network. Select from the list and **Double Click** on the IP address to add it to a site. Then enter the username and password of the site.



NOTE: The Device Search function can only be used to search for addresses within the same LAN. For example, if the local computer uses an IP address of 192.168.**1**.5, and a connected DVR has an IP address of 192.168.**1**.7, CMS will be able to find the IP address of the DVR. However, if there is another DVR connected to another LAN network such as 192.168.**3**.6, CMS (whose IP is 192.168.**1**.5) will not be able to find the IP address of the DVR in another LAN network.

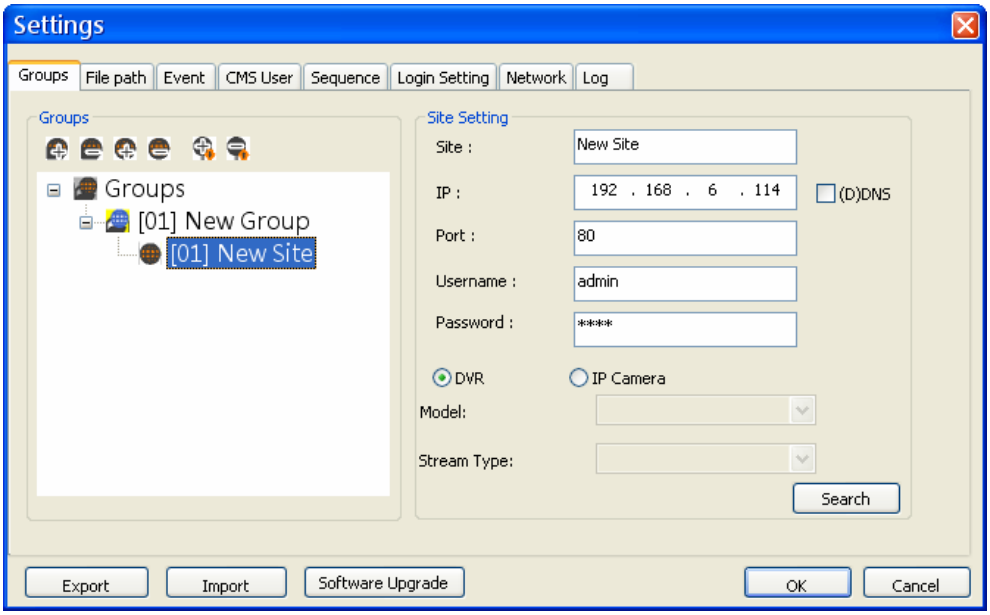
Search UPnP devices:

Check the box in front of "Search UPnP Devices" and click <Refresh> to start searching for UPnP devices within the LAN. While the search is in process, <Refresh> button and "Search UPnP Devices" option will be grayed out and cannot be clicked or selected, in addition the window cannot be closed. <Refresh> button will be changed to <Search UPnP> to remind the user of the status. Everything will work only after the searching process is done. If the user double clicks on the list or tries to close the window, a warning message will be shown.

6.2.3 Setup the DVR Site Manually

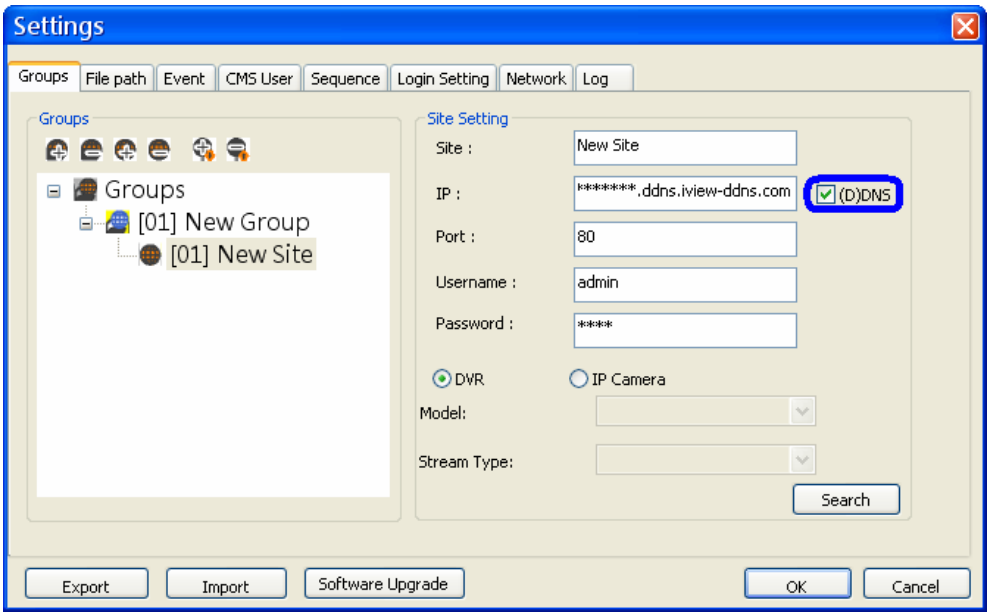
If the detailed information (IP address, port, username, and password) of the connected DVR is provided, a site can be setup manually.

Add a new site and enter the Name, IP address, Port, Username, and Password. Select "DVR" and click <OK> to complete the setting.



NOTE: If the entered Username and Password is a user account instead of an administrator account, the same DVR account restriction will be applied. When a user account accessed a function that is restricted, the following message will be shown:

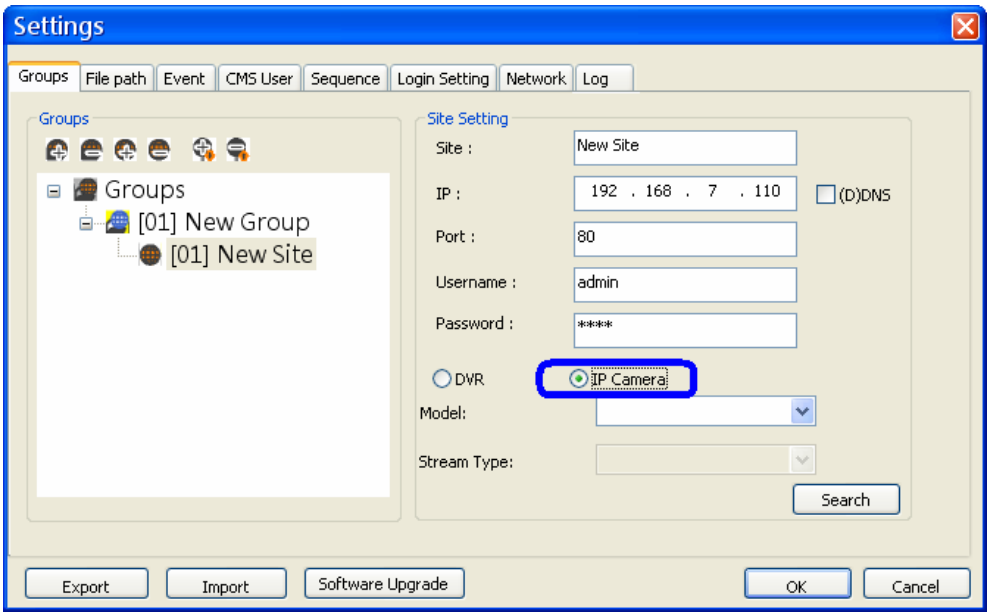
If the DDNS information of the DVR is known, the DDNS data can be used to setup a site. Check the box <(D)DNS> circled below, and type in the DDNS data. Click <OK> to complete the setting. An example of the DDNS address looks like: *********.ddns.iview-ddns.com**



NOTE: Port number does not apply to DDNS entries. Therefore, if the <(D)DNS> box had been checked, the port number does not need to be changed.

6.2.4 Setup the IP Camera Site Manually

If an IP Camera is going to be added to CMS, the required information includes the IP address, port, username, password, and brand/model type of the IP Camera. Enter the data and select "IP Camera" as circled below. Then choose the <Model> and <Stream Type> of the IP Camera. Click <OK> to complete the setting.



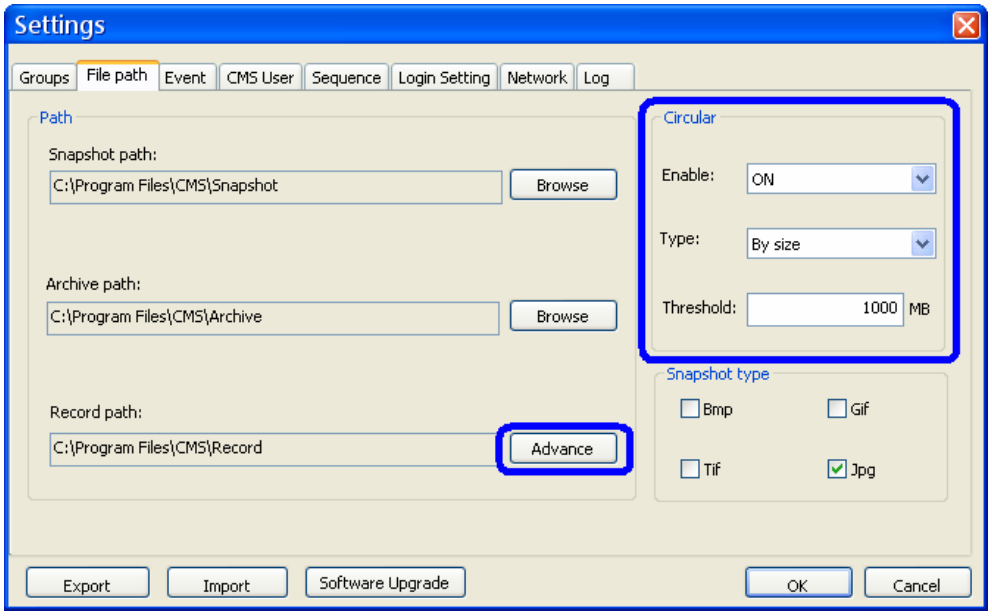
Supported IP Cameras:

Brand/Model	Streaming Protocol	Video Stream Format	Audio Stream Format
DynaColor Video Server (D7521)	HTTP	MPEG4 / MJPEG	MS-ADPCM (2-Way Audio)
DynaColor MegaPixel IP Camera (NH Series)	RTP+RTSP (Intranet)	MPEG4 / MJPEG	g.711 a-law / g.711 u-law (2-Way Audio)
	RTP_Over RTSP (Internet)	MPEG4 / MJPEG	g.711 a-law / g.711 u-law
DynaColor (NW Series)	HTTP	MJPEG / H264	Adpcm / g.711 a-law / g.711 u-law
	RTP+RTSP	MJPEG / H264	g.711 a-law / g.711 u-law
ACTi	RTP+RTSP	MPEG4 / MJPEG	PCM
AXIS 200 Series	RTP/RTSP	MPEG4	Unsupported
VivoTek 7000 Series	RTP/RTSP	MPEG4	Unsupported

NOTE: Each group can only connect to at most 16 IP cameras.

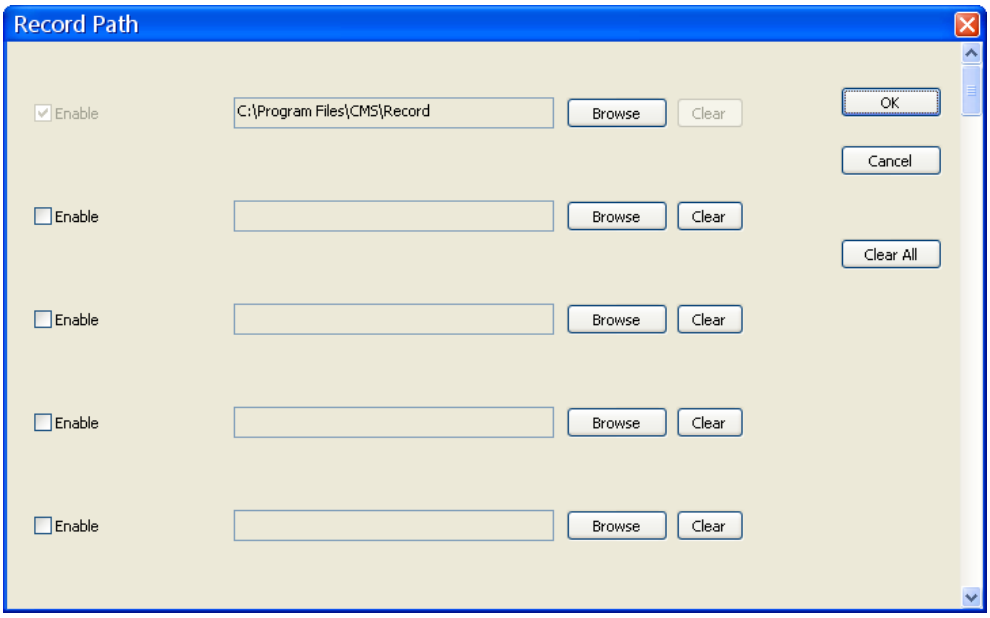
6.3 Setup the File Path

The file path menu defines stored destination of snapshot, archive files, and recorded videos. It is recommended to use the default folders.



Record Path

The recorded videos can be stored in more than one folder. Click on <Advance> and the following window will be shown:



The number of selectable folders equals to the number of HDDs the PC connects to, excluding HDDs with capacity less than 1GB. Check the "Enable" box and click <Browse> to set more destination folders. Each folder should be from different HDD or an error message will be displayed. Note that if a HDD with less than 1GB capacity is selected, an error message will be shown. Click on <Clear All> will delete all folders except the first preset folder.

In each folder, subfolders will automatically be created with folder name "RecordFolder********", which ******** represents an 8-digit serial number. Each subfolder can stores up to 500 videos. Once a subfolder is full, a new subfolder with a subsequent number will be created and new files will be stored to the new subfolder.

Circular Function

The <Circular> function is used to adjust the HDD space usage of CMS. For example, when the threshold is set to 1GB, and there are 20GB free disk space remaining in the HDD, CMS can only access the HDD no more than 19GB. When the free disk size is smaller than threshold:

1. If the circulation of files is performed at first time, CMS will start to overwrite the earliest recoded data. Next time when CMS starts up, the circulation of files will continue from where it was up to.
2. If the destination folders are reset, new files will be stored to the first folder. If the first folder contains DRV files, all old files will be rewritten with new files until the folder is full.

Record Videos from IP Cameras to Remote Network Disks

When videos from IP cameras will be recorded to a remote network disk, the DRV file is going to be stored under a temporary folder "\CMS\TEMP_REC\" if the file size is less than 100MB. Once the file size reached 100MB, the file will automatically be transfer to the designated remote network disk.

If the recording is interrupted (either connection reset, disconnected, stop recording, etc), a progress bar will be shown to inform the user that the DRV file is being transfer to the the designated remote network disk.

NOTE: For CMS servers 2~4, the temporary folders will be named as TEMP_REC2, TEMP_REC3, and TEMP_REC4.

Snapshot Type

CMS has a snapshot function, and the file type for snapshot can be defined here. Note that if more than one type are selected, take 2 types for example, then each snapshot is saved to 2 types of files. They are the same image, but in different formats. For instance, if Bmp & Tif are selected and the snapshot is taken, two types of image files of the same snapshot image will be created.

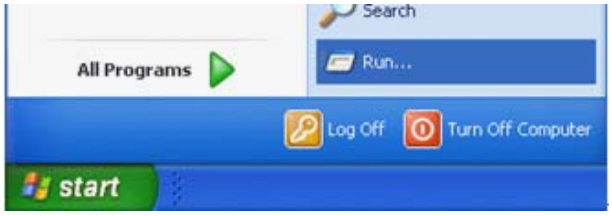
6.4 Alert Events

The alert function enables the connected DVR(s) to send alert signals to CMS within the network. This section describes how the alert function works.

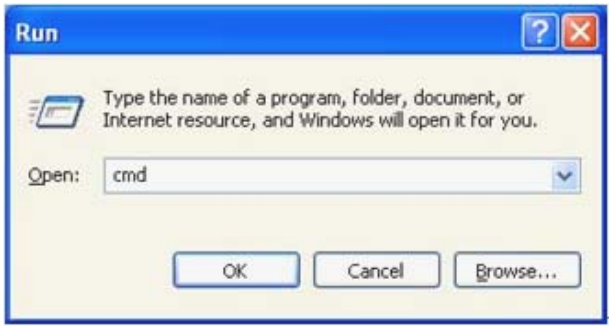
Setting up the alert function:

Step 1. Find the IP address of the local computer.

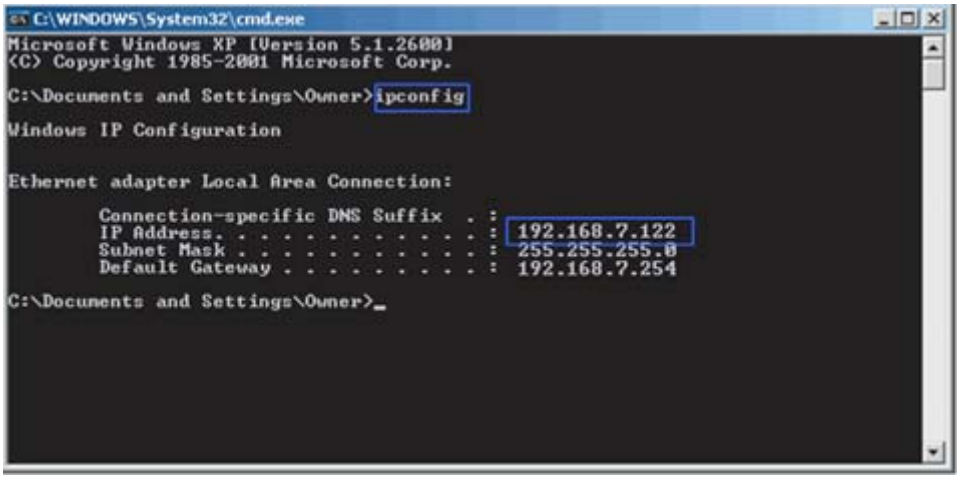
Go to **Start** menu, select **Run**.



Type in **cmd** and click OK.



Type in **ipconfig** to get the IP Address of the local computer. Write down the IP address on a piece of paper for later use.



Step 2. Setup the <Alert Notification Setup> on the connected DVR(s). The <Alert Notification Setup> allows the user to send alert notifications to CMS program which had been installed to the computer.

Alert Notification Setup	
1. Alert Configuration Set	1
2. Alert Notification	OFF
3. Alert IP	192.168.7.122
4. Alert Port	9999
5. Alive Interval	120sec

- Alert Configuration Set

  <Alert Configuration Set> provides 3 combinations of Alert Notification, IP, and Port. The user can match the connected DVR to at most 3 different CMS servers.

- Alert Notification

  4 options are included in this item; <OFF>, <Event>, <Alive>, and <Both>.

  <**OFF**>: The Alert Notification is turned off.

  <**Event**>: When the alarm is triggered, the DVR will send an alert message to CMS.

  <**Alive**>: The DVR will send an alive message to CMS every *N* second just to show that the connection between the DVR and CMS is in effect. The time interval *N* can be adjusted in <Alive Interval>.

  <**Both**>: This enables the DVR to send both Event and Alive alert messages to CMS.

- Alert IP

  The Alert IP must match the IP address of the local computer. In this example, the IP address of the local computer is 192.168.7.122.

- Alert Port

  The Alert Port is the port used for sending and receiving alert signals. Choose any port that is not restricted by the network. The ports for both connected DVR and CMS Alert **must be the same**. In this example, the port is set to 9999.

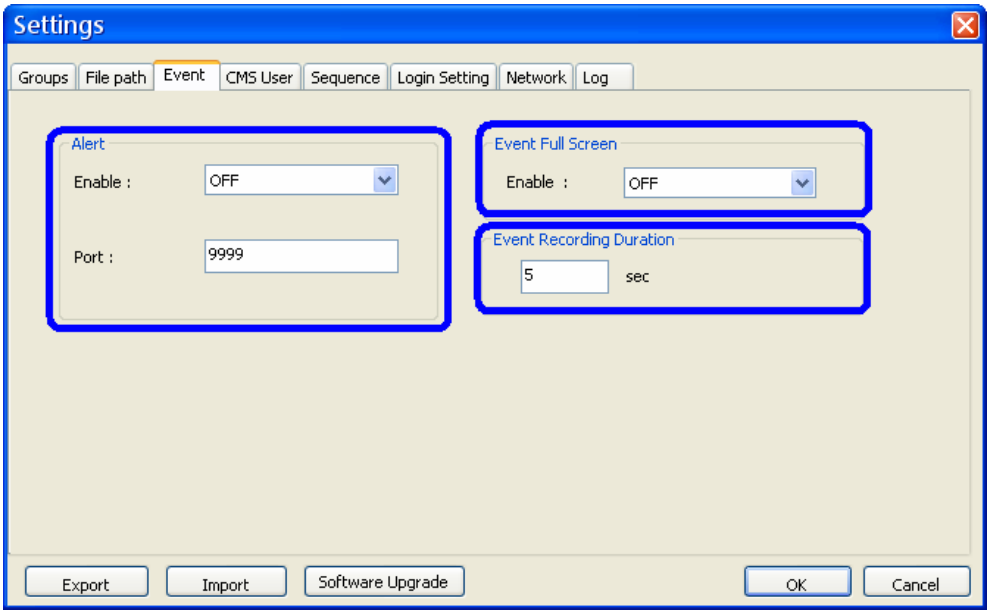
NOTE: If 2 configuration sets are corresponding to 2 different CMS servers, each CMS server must have its own unique port number.

- Alive Interval

  Time interval (1 to 255 sec) between each alive message can be set here.

Step 3. Setup the Alert of CMS.

Click on the <Setting> icon and go to Event tab to setup the port. Port 9999 is used in this example. Select ON to enable the alert function and click OK. <Event Full Screen> is used to display full screen of the alerted channel. Select <ON> to activate this function, or <OFF> to deactivate it. <Event Recording Duration> is for users to define recording duration of event videos, when schedule is set and/or when motion recording is enabled.



NOTE: If the user reconnect or disconnect the sites, the list of the event full screen will be cleared.

NOTE: Once the list of the event full screen finished playing, the window will return to former viewing status**.**

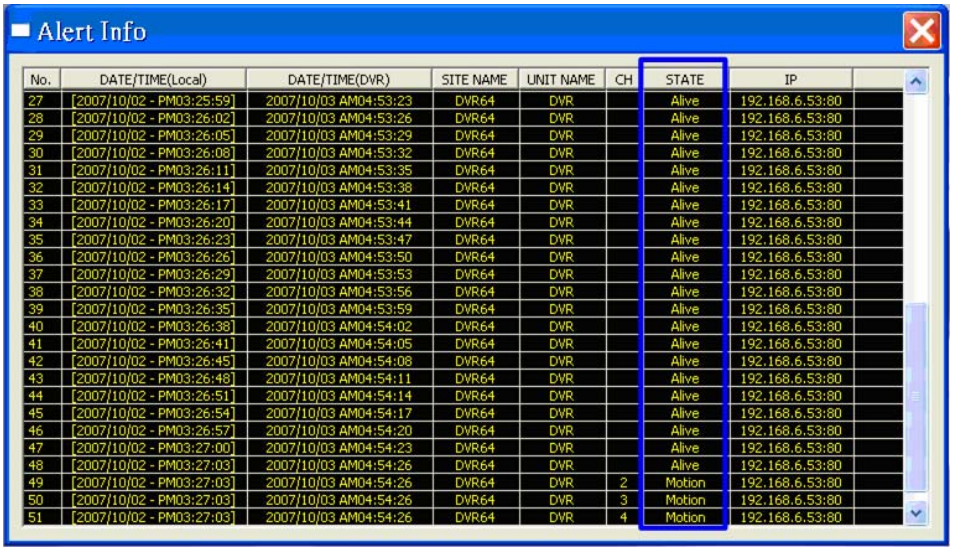
Step 4. Alert Action

The connected DVR sends 4 types of alert message (State) to CMS: Alive, Alarm, Motion, and Video Loss. Alive messages are sent when the notification option is set to <Alive> or <Both> in the connected DVR. Alarm, Motion, and Video Loss messages are sent when the notification option is set to <Event> or <Both> in the connected DVR.

Viewing the alert events:

When the alert is triggered while the alert function is enabled, CMS icon shown in the system tray will blink to indicate that an alert is being triggered. Right click on CMS icon and the menu as shown on the right will be displayed.

- Choose <Alert Info> to show the following window. Alternatively, double click on CMS icon can also display the Alert Info window.



No.	DATE/TIME(Local)	DATE/TIME(DVR)	SITE NAME	UNIT NAME	CH	STATE	IP
27	[2007/10/02 - PM03:25:59]	2007/10/03 AM04:53:23	DVR64	DVR		Alive	192.168.6.53:80
28	[2007/10/02 - PM03:26:02]	2007/10/03 AM04:53:26	DVR64	DVR		Alive	192.168.6.53:80
29	[2007/10/02 - PM03:26:05]	2007/10/03 AM04:53:29	DVR64	DVR		Alive	192.168.6.53:80
30	[2007/10/02 - PM03:26:08]	2007/10/03 AM04:53:32	DVR64	DVR		Alive	192.168.6.53:80
31	[2007/10/02 - PM03:26:11]	2007/10/03 AM04:53:35	DVR64	DVR		Alive	192.168.6.53:80
32	[2007/10/02 - PM03:26:14]	2007/10/03 AM04:53:38	DVR64	DVR		Alive	192.168.6.53:80
33	[2007/10/02 - PM03:26:17]	2007/10/03 AM04:53:41	DVR64	DVR		Alive	192.168.6.53:80
34	[2007/10/02 - PM03:26:20]	2007/10/03 AM04:53:44	DVR64	DVR		Alive	192.168.6.53:80
35	[2007/10/02 - PM03:26:23]	2007/10/03 AM04:53:47	DVR64	DVR		Alive	192.168.6.53:80
36	[2007/10/02 - PM03:26:26]	2007/10/03 AM04:53:50	DVR64	DVR		Alive	192.168.6.53:80
37	[2007/10/02 - PM03:26:29]	2007/10/03 AM04:53:53	DVR64	DVR		Alive	192.168.6.53:80
38	[2007/10/02 - PM03:26:32]	2007/10/03 AM04:53:56	DVR64	DVR		Alive	192.168.6.53:80
39	[2007/10/02 - PM03:26:35]	2007/10/03 AM04:53:59	DVR64	DVR		Alive	192.168.6.53:80
40	[2007/10/02 - PM03:26:38]	2007/10/03 AM04:54:02	DVR64	DVR		Alive	192.168.6.53:80
41	[2007/10/02 - PM03:26:41]	2007/10/03 AM04:54:05	DVR64	DVR		Alive	192.168.6.53:80
42	[2007/10/02 - PM03:26:45]	2007/10/03 AM04:54:08	DVR64	DVR		Alive	192.168.6.53:80
43	[2007/10/02 - PM03:26:48]	2007/10/03 AM04:54:11	DVR64	DVR		Alive	192.168.6.53:80
44	[2007/10/02 - PM03:26:51]	2007/10/03 AM04:54:14	DVR64	DVR		Alive	192.168.6.53:80
45	[2007/10/02 - PM03:26:54]	2007/10/03 AM04:54:17	DVR64	DVR		Alive	192.168.6.53:80
46	[2007/10/02 - PM03:26:57]	2007/10/03 AM04:54:20	DVR64	DVR		Alive	192.168.6.53:80
47	[2007/10/02 - PM03:27:00]	2007/10/03 AM04:54:23	DVR64	DVR		Alive	192.168.6.53:80
48	[2007/10/02 - PM03:27:03]	2007/10/03 AM04:54:26	DVR64	DVR		Alive	192.168.6.53:80
49	[2007/10/02 - PM03:27:03]	2007/10/03 AM04:54:26	DVR64	DVR	2	Motion	192.168.6.53:80
50	[2007/10/02 - PM03:27:03]	2007/10/03 AM04:54:26	DVR64	DVR	3	Motion	192.168.6.53:80
51	[2007/10/02 - PM03:27:03]	2007/10/03 AM04:54:26	DVR64	DVR	4	Motion	192.168.6.53:80

NOTE: The maximum number of items can be kept on the alert list is 1,000. When the list reached 1,000 items, the earliest alert messages will be deleted while the new ones are being saved.

Double click on the Event Messages (Alarm, Motion, or Video Loss) to view the event video in full screen. If the DVR sending the Event Messages is not currently connected to CMS, a message box will be displayed as the following. Connect the DVR and the event video will be available.

NOTE: The Alert function works ONLY within LAN network. (Please refer to the note of the Search function)

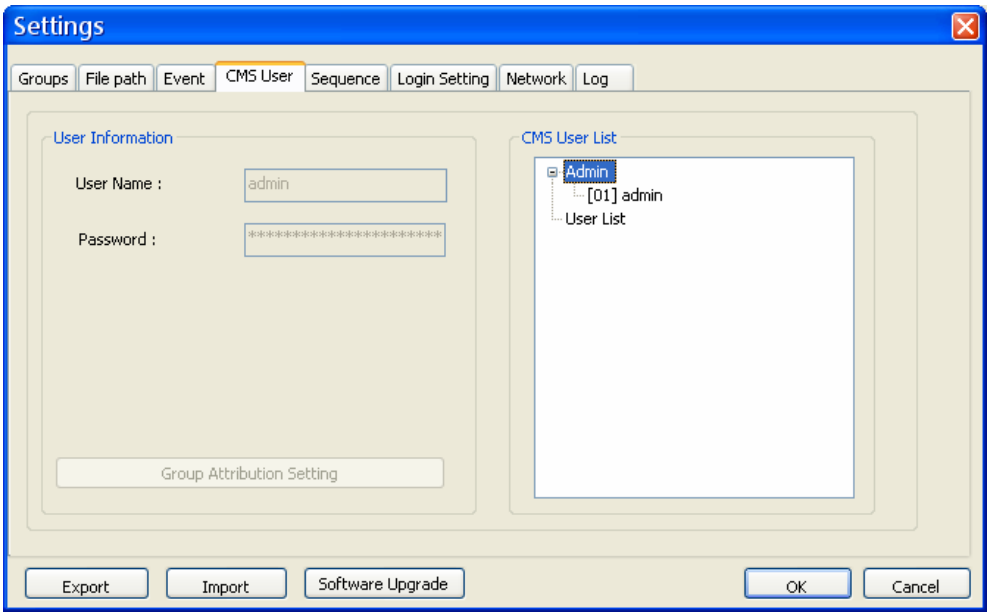
NOTE: If the alert event has not yet been added to the database of the DVR, a warning message will be shown to notify the user.

6.5 CMS User

The <CMS User> is for the management of user accounts in CMS. Users can set users' account information and privileges. The default username and password are:

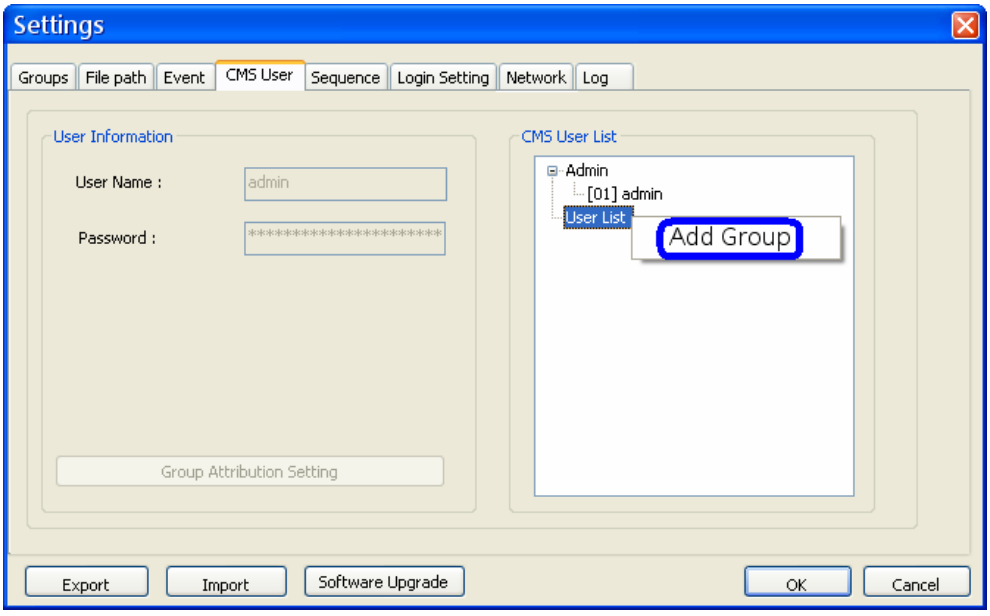
Username: admin

Password: 1234

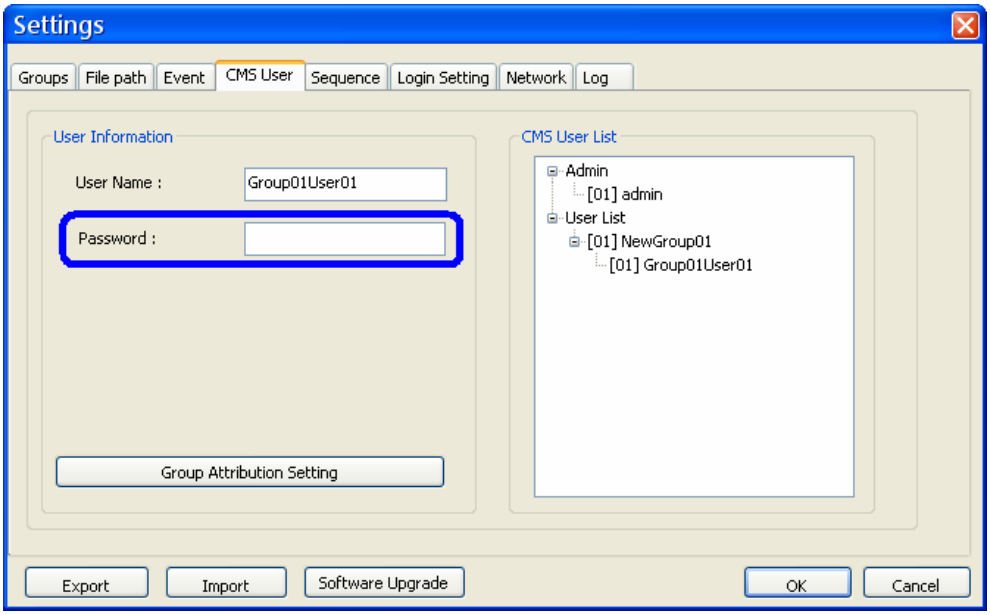


NOTE: Only users under the <Admin> group have the privilege to change the settings in <CMS User>.

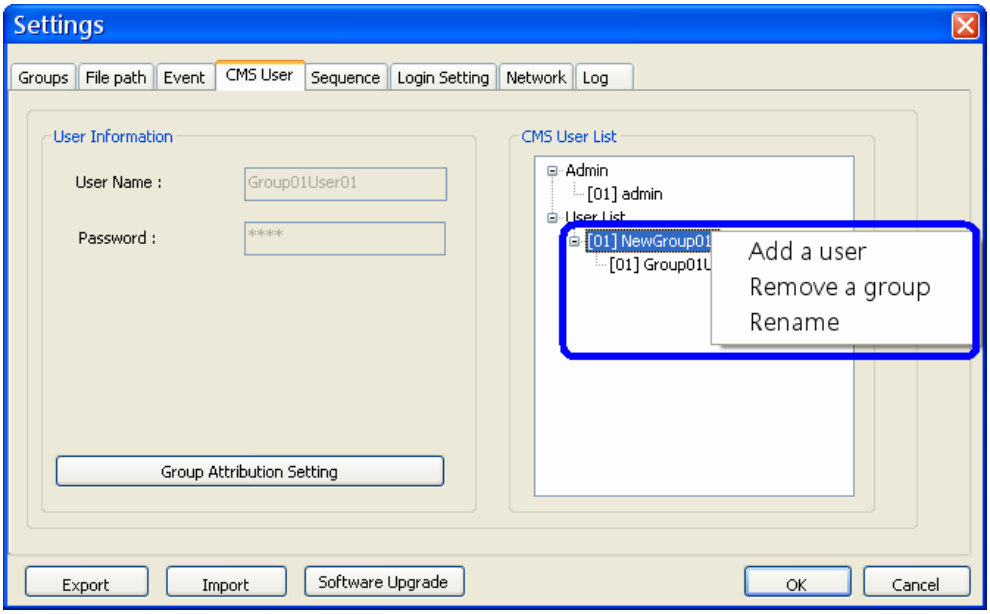
To add a user, users must first add a group. Right click on <User List> and select <Add Group> from the pull-down menu.



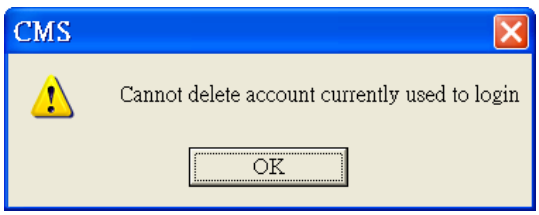
After the group is added, the first user account of the group will also be created. Users **MUST** set the password for this account before users can go to the next step.



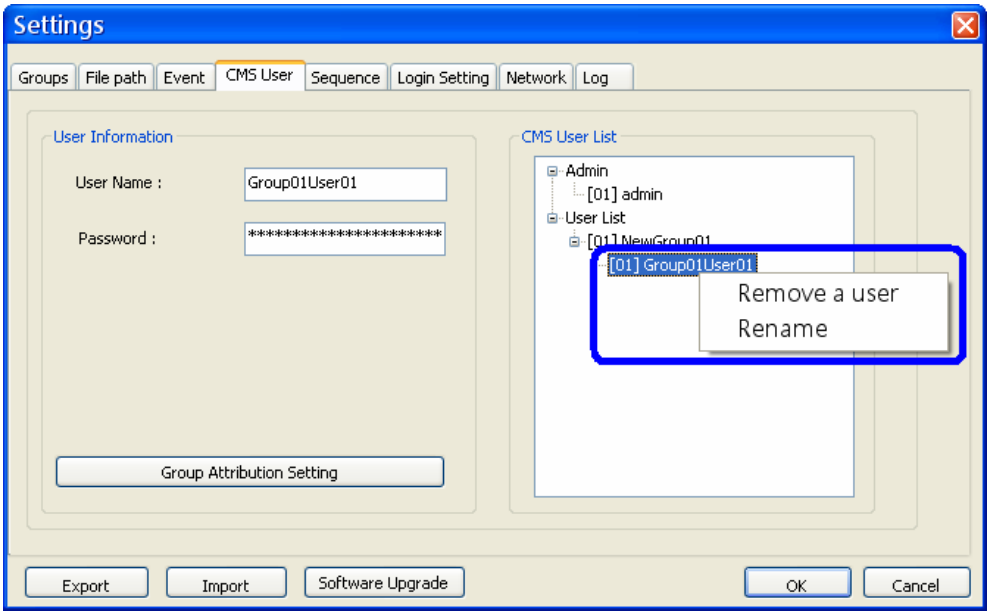
Right click on <NewGroup01> to add a user, remove a group, or rename the group.



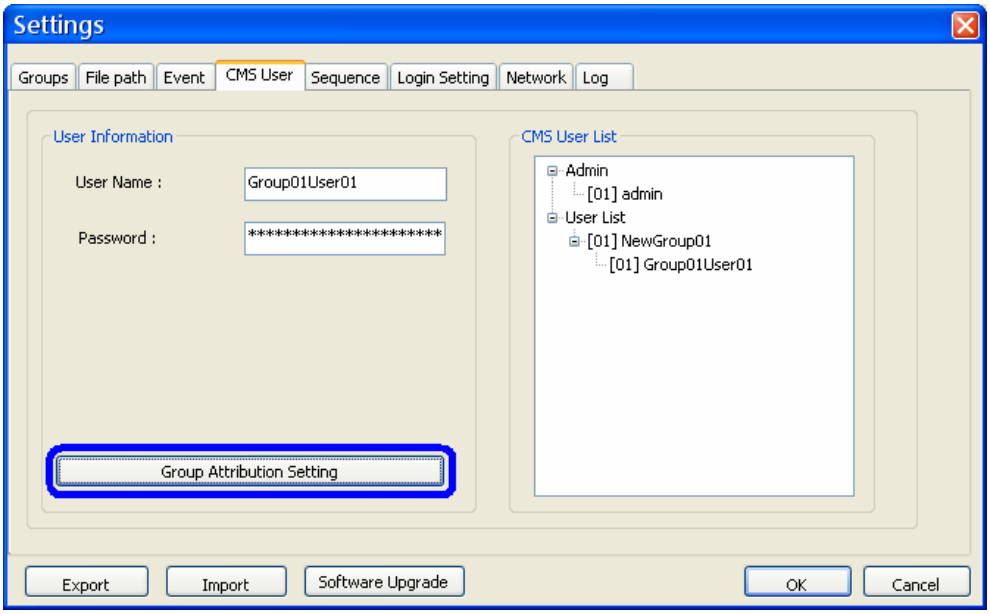
NOTE: The account currently used to login cannot be deleted.



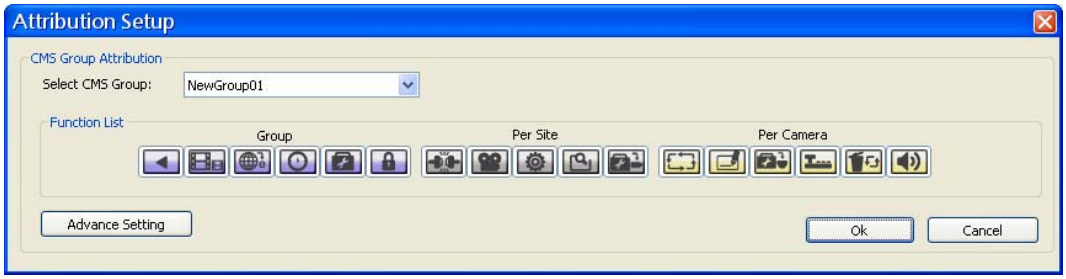
Right Click on <Group01User01> to remove a user or rename the username.



The <Group Attribution Setting> is for setting up the privileges of the selected user. Users can give each user account different privileges by configuring this function.

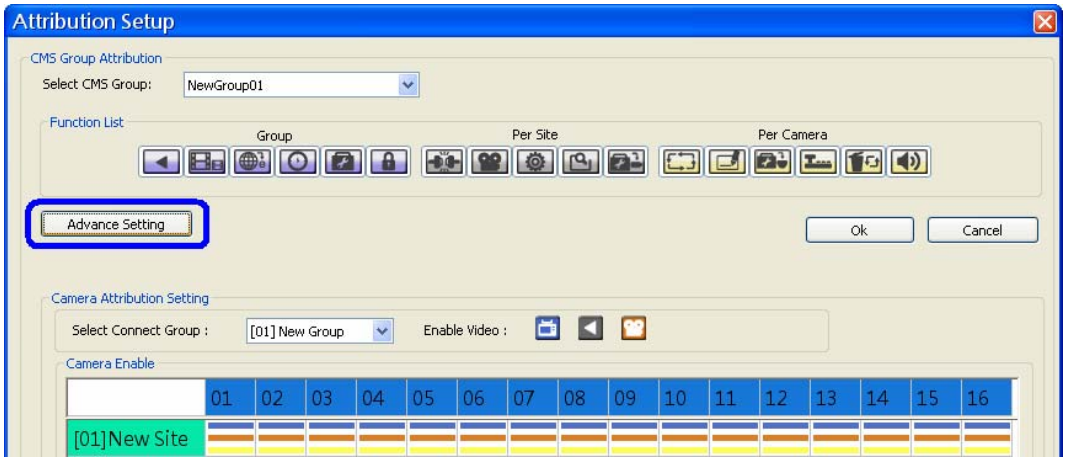


After entering the <Group Attribution Setting>, the following diagram will be shown. Select a user account in <Select CMS Group>, and users can click on the buttons to enable or disable its privileges.



- Purple buttons are CMS menu controls including: Playback, CMS Player, Emap, Schedule Record, Setting, and Lock.
- Gray buttons are site controls including: ReConnect/DisConnect, Record, Configuration, Event Search, and Camera Setting.
- Yellow buttons are camera controls including: Sequence, Rename, Dome Setting, Dome Control, Remove, and Sound Notification.

Each camera can be set to enable/disable Live, Play, or Record function individually after clicked on <Advance Setting>. Refer to the following figure for details.



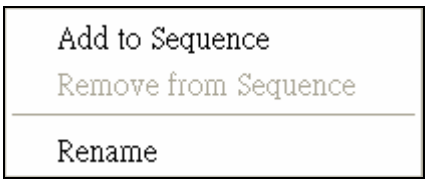
NOTE: The preset is 16 cameras for all sites. The real number of cameras per each site will not be detected.

NOTE: These settings will affect the whole operation of CMS. Please be very careful while configuring the settings.

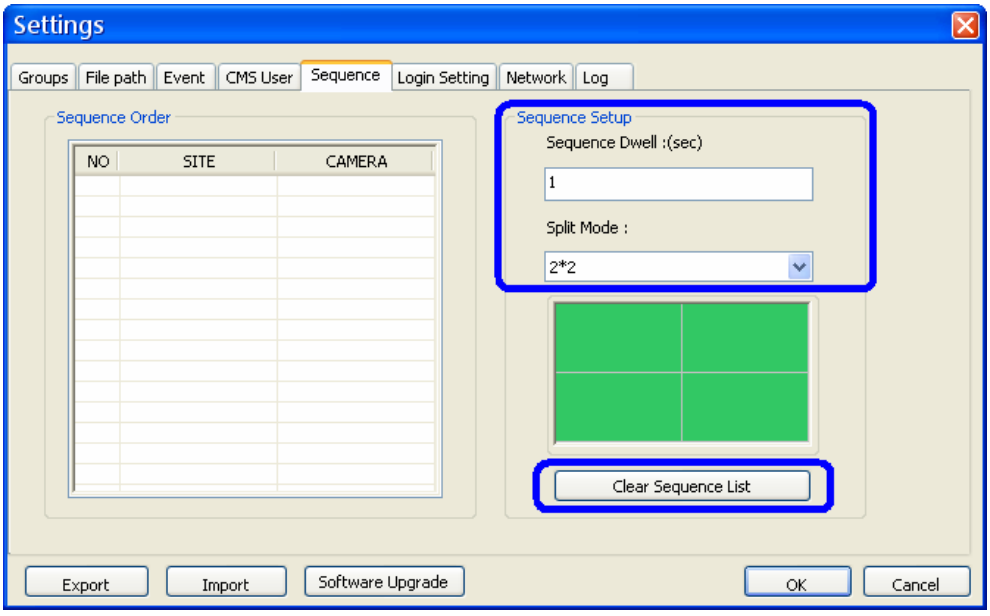
Next time when users login, users can choose to enter CMS either as the admin or the user.

6.6 Sequence

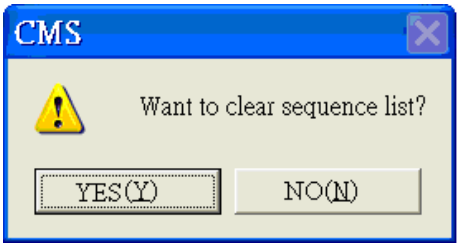
This function is used to set the displaying sequence. Before starting sequence display, users need to add channels to the sequence list. Right click on any channel and select <Add to Sequence> to add, or <Remove from Sequence> to remove. Note that when the channel is added to the sequence, a capital "S" will be shown on the icon.



After the channels are added to the sequence, click on the <Setting> icon and choose <Sequence> to setup the sequence. Under the <Sequence Setup> option, users can setup the dwell time (1 to 120 seconds), and split mode (2*2, 3*3, 4*4, or 5*5). <Sequence Order> lists the channels that have been added to the list in order. Click <OK> to save the settings.

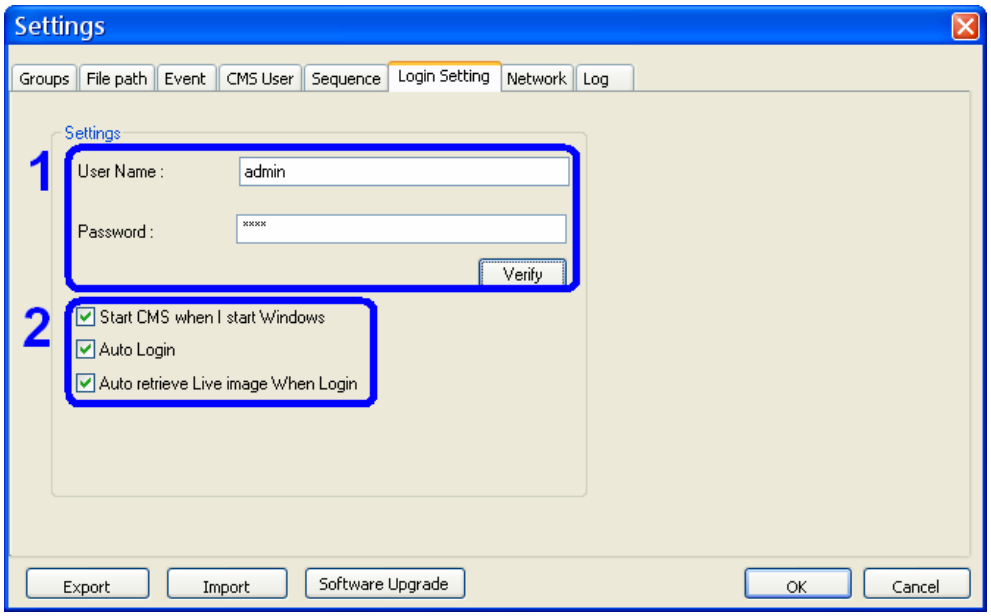


Click <Clear Sequence List> to empty the list. A message window will be shown for confirmation.



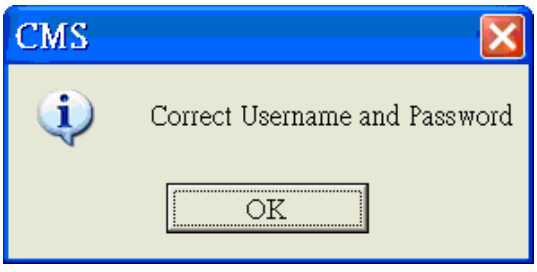
6.7 Login Setting

The user can edit options regarding login settings in this section. Administrator username and password is required to edit the setting.

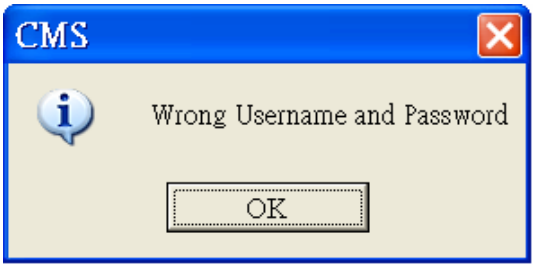


As shown in the above picture, the box marked "1" is where the user can enter a set of username and password to be used for auto login. The "Verify" button can help the user to check if the username and password are correct. The following messages boxes will show to inform the result of verification.

Correct

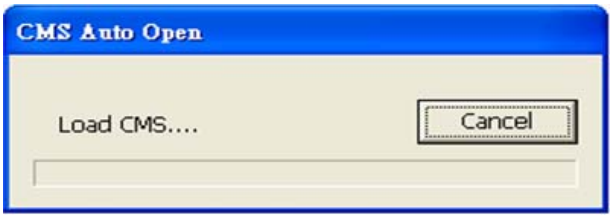


Wrong



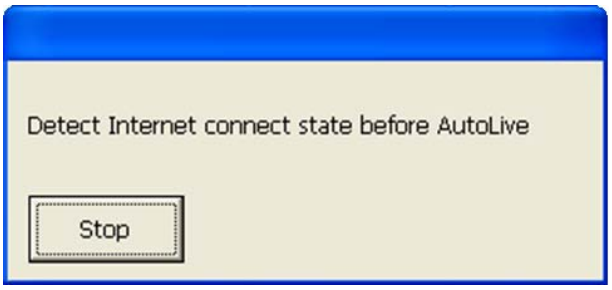
The box marked "2" contains the options regarding automatic actions. Clicking the first option "Start CMS when I start Windows" to request the computer to open CMS in the mean time when the system startup. Note that the other two options "Auto Login" and "Auto retrieve Live image When Login" will be checked at the same time. Nonetheless, it is still the user's choice to determine the favorite setting.

The following message will be shown when CMS is auto opening after the system started up. Click "Cancel" can terminate opening CMS.



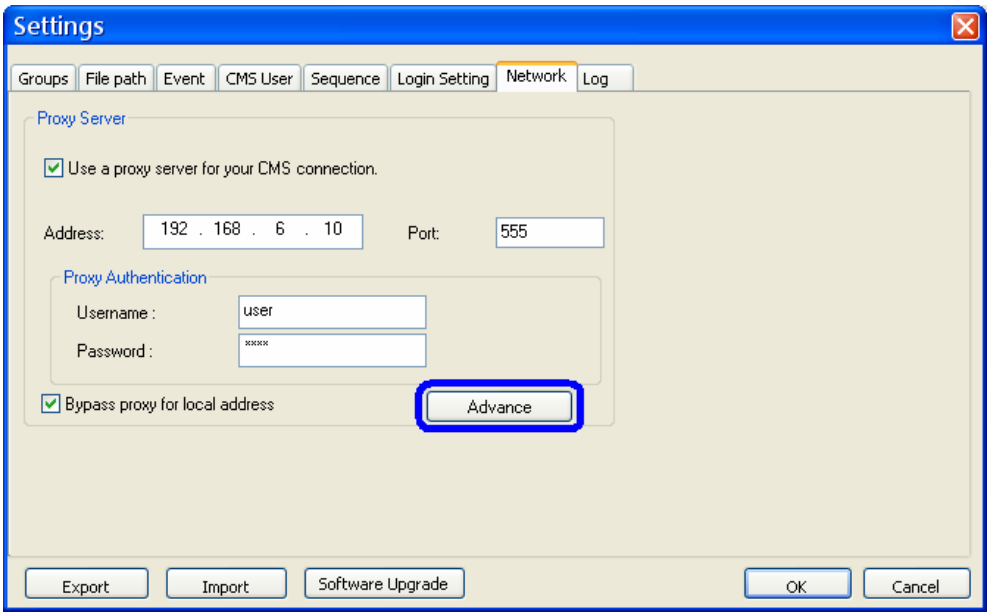
Click the second option "Auto Login" to automatically login when CMS starts. Remember to enter and verify username and password in box 1.

Click the third option "Auto retrieve Live image When Login" to automatically connect to the sites in the start group when CMS starts. Detection of internet connection will be performed before hand and the following message will be displayed. Click <Stop> to terminate the detection and AutoLive will not be initiated.



6.8 Network Setting

CMS provides the option of connection via proxy server for DynaColor DVRs and Video Servers (D7521). Click <Network> tab and the setting items are shown as the following.

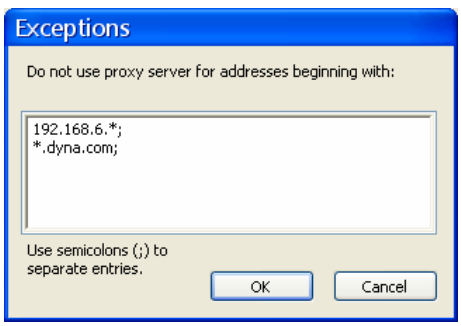


If users wish to create the connection via a proxy server, check the box "Use a proxy server for your CMS connection." Then enter the IP address and port of the proxy server. Enter username and password if authentication is required.

NOTE: CMS supports the most common authentication keys "Digest" and "Basic". The authentication will be automatically detected and performed.

Check the box "Bypass proxy for local address" to disable connection via the proxy server for local LAN network.

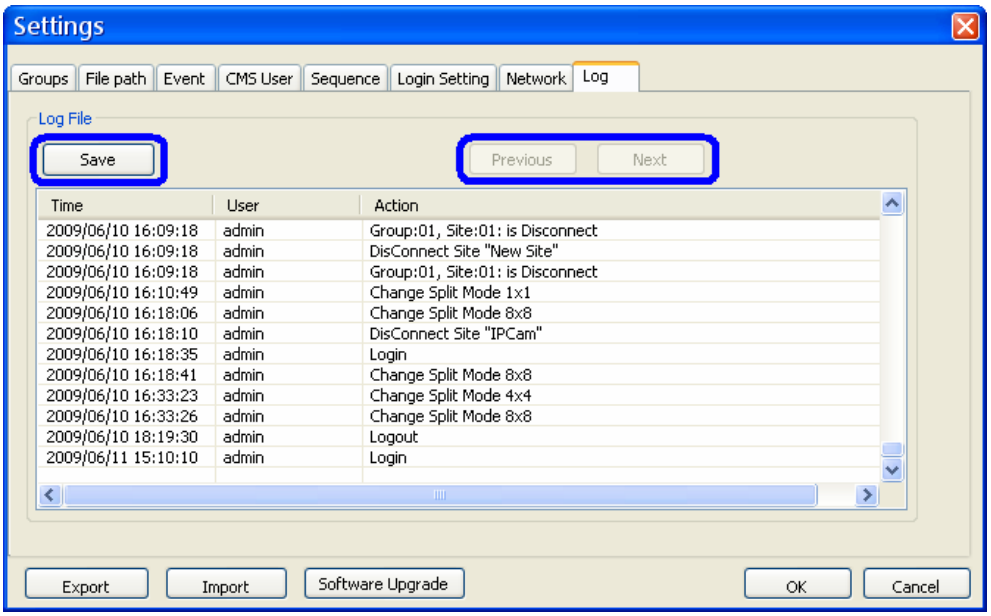
The <Advance> button allows the user to edit an exception list where addresses in the list will not be connected via the proxy server. The addresses can be subnets. Refer to the picture on the right for an example of the exception list.



NOTE: All functions of the proxy server are tested with the most common "Squid Proxy Server". Some other proxy servers may not work properly.

6.9 Log Data

The step by step operation of CMS will be recorded by CMS log function. Refer to the following picture for data kept in the log file.



The list will display 1,000 items with latest ones shown at the bottom. The list can store up to 10,000 items in circulation, which means the oldest ones will be deleted when the number of items exceeds 10,000.

Save button:

Click this button to save the log file to a desired destination.

Previous button:

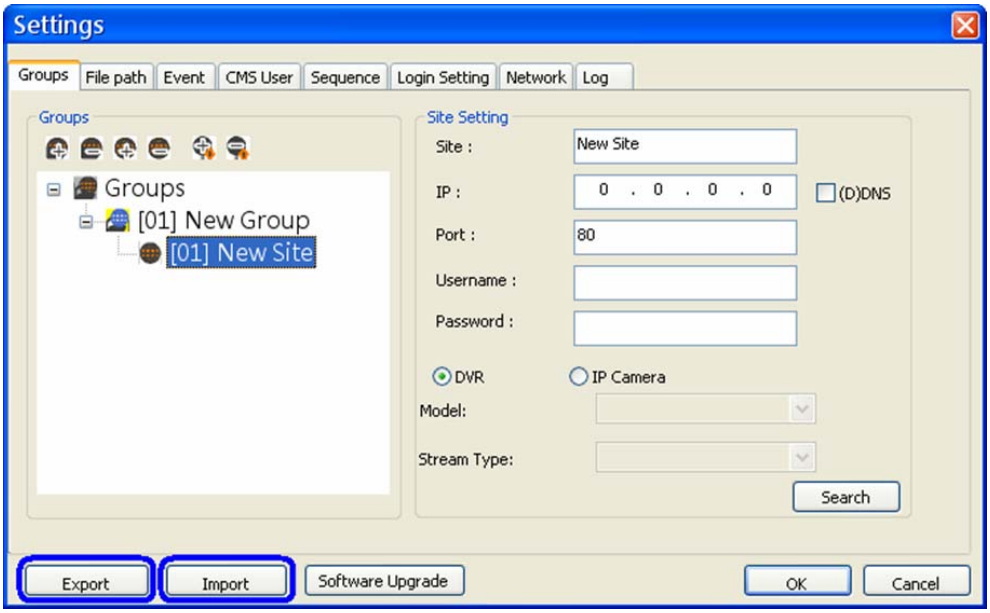
Click this button to show previous 1,000 items.

Next button:

Click this button to show next 1,000 items.

6.10 Export or Import Settings

The export/import function provides users the option to backup the settings as needed.



To export the configuration, click <Export> and select a directory to save the *.zip file.

To import a previous saved configuration, click <Import> and find the *.zip file that was previously saved.

NOTE: After a setting is imported and saved, the imported setting will be loaded immediately and CMS will reconnect to the sites in the live group.

7. Operation of CMS

There can be at most **4** CMS instances opened simultaneously. If the PC is connected to more than one monitor, for example 4, then the PC can open up to 4 CMS instances at the same time on the 4 monitors respectively. However the processor and RAM of the PC will limit the number of CMS instances as well. Note that all monitors have to be set to the same resolution.

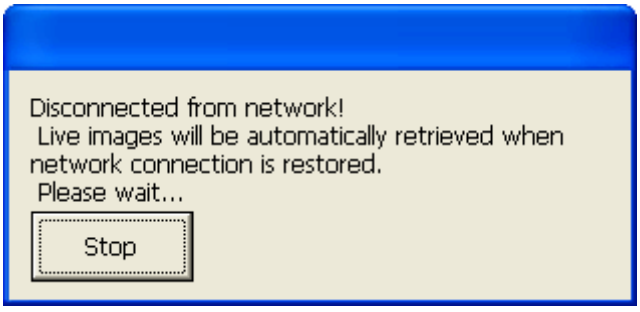
CMS multiple instances limitation according to the PC:

Dual Core or Hyper-Threading	RAM ≥ 512MB	Open 1 CMS
	RAM ≥ 1GB	Open up to 2 CMS
	RAM ≥ 1.5GB	Open up to 3 CMS
	RAM ≥ 2GB	Open up to 4 CMS
Single Core and Frequency > 2.0GHz	RAM ≥ 512MB	Open 1 CMS
	RAM ≥ 1GB	Open up to 2 CMS
	RAM ≥ 1.5GB	Open up to 3 CMS
	RAM ≥ 2GB	Open up to 4 CMS
Single Core and Frequency ≤ 2.0GHz	RAM ≥ 512MB	Open 1 CMS

NOTE: It is recommended to keep the connected channels within 512 channels if multiple CMS instances are opened.

Network Connection Detection

CMS will auto detect network connection status. If CMS lost network connection, the following error message will be displayed.



When CMS detected the restore of network connection, the error message will disappear. Click on <Stop> to cancel this function.

7.1 View Live Image / Assign Camera

The user can view live video or connect to the connected DVR using the live button. Click on the <Live> button to see the live view.

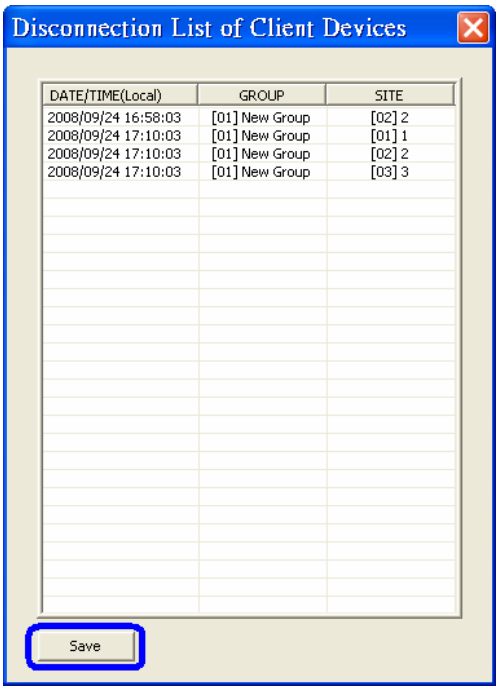
Connect/Reconnect/Disconnect the Sites

If the connection between CMS and the connected DVR has been interrupted, users can reconnect to it by right clicking on the **Site**, and select <ReConnect> from the pull-down menu. Users can also disconnect specific sites by selecting <DisConnect> from the pull-down menu.

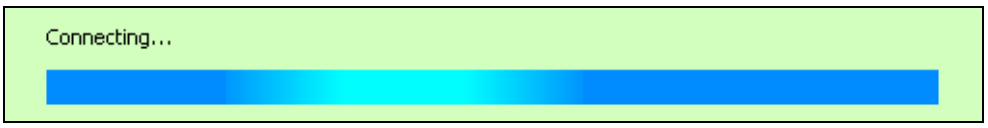
Auto Detection of Disconnected Sites:

CMS will automatically detect if any sites that are connected at the beginning are disconnected for some reason later on in every 3 minutes. A list will be shown (as on the right) when there are sites detected to be disconnected.

The list can be saved as a TXT file by clicking on <SAVE> at bottom left.



NOTE: Besides auto-reconnect, a progress bar will be displayed as below. The connecting process will take at most 30 seconds.



Auto-Reconnect of Specific Disconnected Sites:

CMS will automatically reconnect to specific disconnected sites every 7 minutes. Refer to the following table for all cases.

Situation	Auto-Reconnect
Sites that are not connected at the beginning:	Yes
Sites that are disconnected manually	No
Sites that are connected at the beginning but disconnected for some reason later on	Yes

Assign a Channel/Site to Certain Window(s):

CMS allows users to assign any channel/site in the site tree to any grid of CMS main window. Follow steps below to complete assignment.

Step 1: Click and hold the channel/site users want.
Step 2: Drag and drop it onto the window that users want to assign in.

Resort/Remove Display Window Grids:

Right click on any channel and select <Re-sort> to rearrange camera images of connected sites in order, up to 512 channels.

Alternatively, users can also remove any channel by right clicking on the grid and select <Remove>. Or users can select any grid and press <Delete> key on the keyboard to remove the channel.

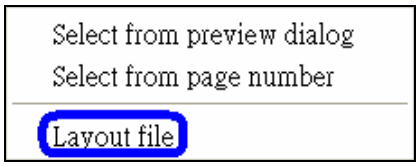
Note that clicking <Re-sort> will restore the removed channels, or users can add the channels back to any grid via drag and drop.

NOTE: These functions will not be accessible in sequence mode.

Save Layout Files:

The layout arrangement can be individually memorized for each connect group. Also, CMS will keep the layout arrangement when it's closed and restore the same layout when it starts up again.

Each login account can save it's own layout files. Right click on any mode icons and the pull-down menu will be shown, as on the right. After selected <Layout file> the setting window will be displayed, as below:



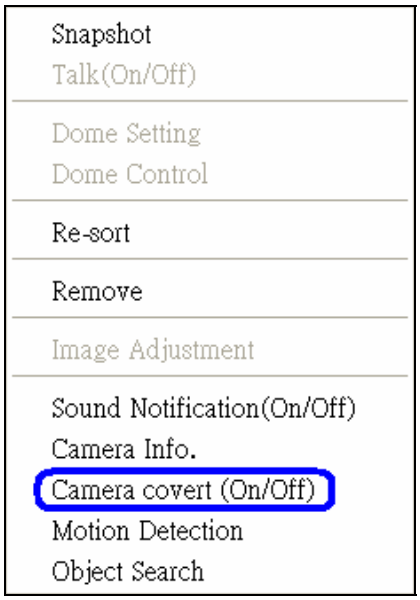
The layout files are for backup or other users' use. Once the file name is entered and clicked <Save>, the new layout file will be shown on the file list. Select a layout file from the list and click <Delete> to delete the file, or press the "Delete" key on the keyboard can also delete the selected file. A message will be shown to confirm the deletion.

To load a layout file, select a file and click <Load>, or double click on the file.

Show Covert Camera Images:

When a camera is set to covert at DVR site, an icon "C" will be shown at bottom left of the grid. Right click on the grid to set the camera to be covert or not at CMS site. The preset is set to covert.

This function is only available when CMS is logged in using accounts under admin group.



7.2 Camera Setting / Camera Info.

Configure Camera Setting:

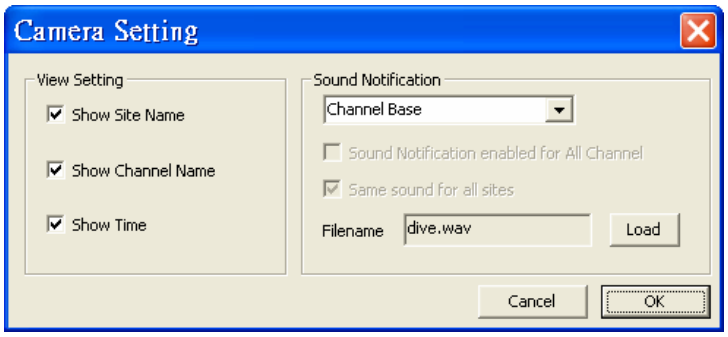
Camera setting can be configured by right clicking on a site and select <Camera Setting>.

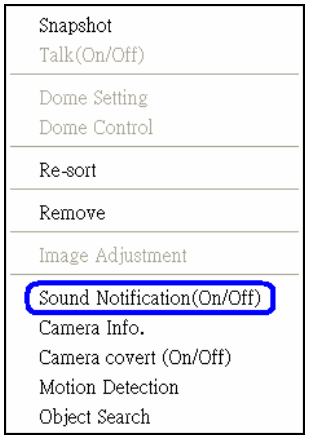
Camera viewing setting enables the user to set the display of *Site Name*, *Channel Name*, or *Time* on the top-left corner of the image.

Camera sound notification enables preset sound file to be played when an alert event occurs. It can be set via Site Base or Channel Base:

Setting via Channel Base:

Select <Channel Base> from the menu and click <Load> to select a sound file. Then click <OK> to save the setting. Next right click on a channel grid to apply the sound setting by selecting <Sound Notification(On/Off)> from the pull-down menu. Note a message window will arise if sound file is not selected yet.





Quick Hot Key:

Click a channel grid and press the following keys:

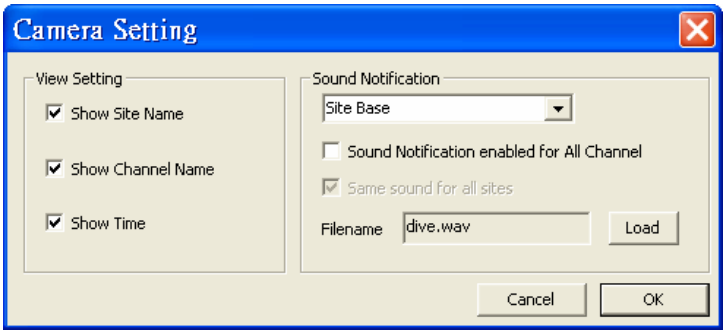
- Ctrl + n: Sound Notification ON
- Ctrl + f: Sound Notification OFF

NOTE: The sound files selected will be saved in CMS folder \Setting\SoundNotification\.

NOTE: On the top-left of the grid will show [SN] to indicate sound notification is turned on.

Setting via Site Base:

Select <Site Base> from the menu and check the option <Sound Notification enabled for All Channel> and/or <Same sound for all sites> as needed. Click <Load> to select a sound file. Then click <OK> to save the setting. The sites have the option <Same sound for all sites> checked will play the same sound, and the latest set sound will be played.



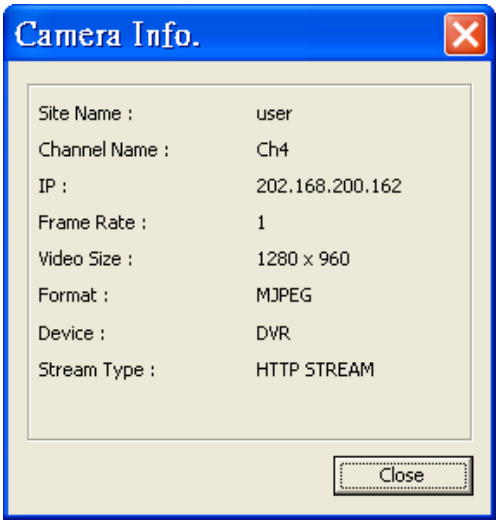
Quick Hot Key:

1. Click a channel grid and press the following keys:
   - Ctrl + Alt + n: Sound Notification ON for all sites
   - Ctrl + Alt + f: Sound Notification OFF for all sites
2. Click a site in the Site Tree and press the following keys:
   - Ctrl + Alt + n: Sound Notification ON for the selected sites
   - Ctrl + Alt + f: Sound Notification OFF for the selected sites

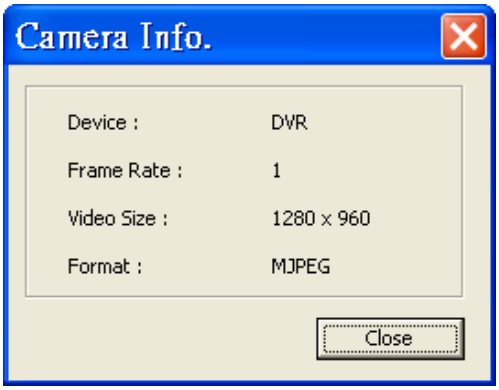
View Camera Info:

The Camera Info can be viewed both in CMS and CMS Player. Right click on any channel grid and select <Camera Info.> from the pull-down menu to view the information. Refer to the following for examples:

Camera Info of CMS



Camera Info of CMS Player

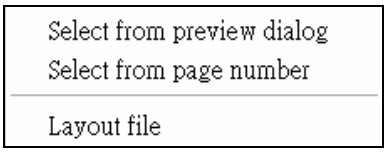


7.3 Display Mode

The available display modes are single channel, 4-windows, 9-windows, 16-windows, 25-windows, 36-windows, 49-windows, 64-windows, 8-windows, 10-windows, and 13-windows.

To view in single channel, double click on the channel in the site tree or on the grid. Then two arrow buttons will be displayed on the screen, as shown below. Click on the left arrow button to switch to image of the previous channel. On the other hand, click on the right arrow button to switch to image of the next channel.

To view in multiple-window mode, right click on the desired icon and a menu will be display as on the right. The selections are described as the following.

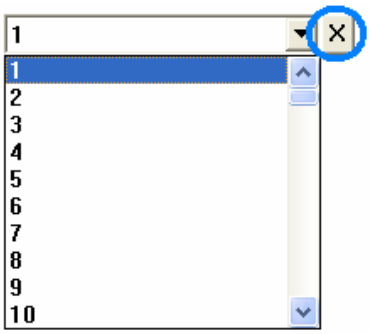


Select from preview dialog:

Choose this option and the picture as below will be shown. When the mouse pointed to any item, the preview display will be shown on the right. Double click on any item to display it on the viewing area.

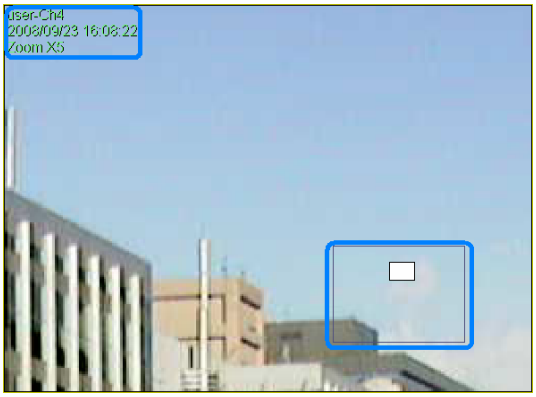
Select from page number:

Choose this option and the picture as on the right will be shown. Select any page number to display the chosen page on the viewing area. Since the maximum channel connection is 512ch, the choices of page numbers for 4-windows display mode will be from 1 to 128. A control icon <X> is provided to exit without selection.



7.4 Zoom In/Out Control via Mouse

Both in CMS and CMS Player, zoom in/out can be easily control via mouse scroll wheel. Either in CMS or CMS Player, click on any grid that users wish to zoom in viewing area. Move the scroll wheel away from users to zoom in and the screen will show like the following picture.



On the upper left-hand corner will show zoom-in multiple. The maximum multiple is X7. Also on the lower right-hand corner will show the position of current viewing area, shown as an inner white rectangle, comparing with the original screen, shown as an outer rectangle frame.

In addition, the viewing area can be dragged and moved by left clicking and holding the mouse while moving. On a zoomed-in screen, the mouse pointer will change to and when the mouse is clicked the pointer will become to indicate that the image is dragged.

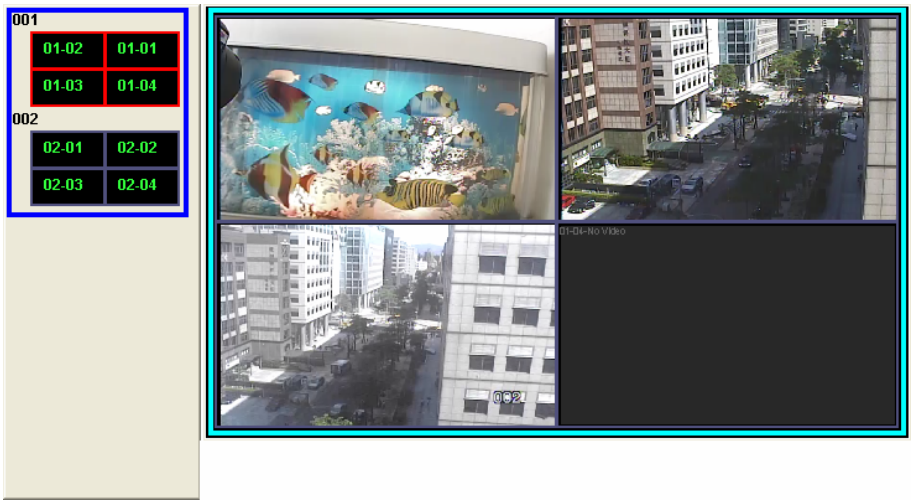
NOTE: This function is not available in Dome Camera Control mode. Scrolling the wheel of the mouse will zoom in/out the camera lens of the dome camera.

NOTE: This function will use up a lot of CPU resources. It is recommended not to open too many programs at the same time to avoid crash of CPU.

7.5 Sequence Display

To start displaying the sequence list, click on the <Sequence> icon to start the sequence. The color of the icon will change to red color when the sequence mode starts. The initial display mode will be what was set in sequence setting (2*2, 3*3, 4*4 or 5*5).

Another way to start displaying the sequence list is by right clicking on the sequence icon and a list will be displayed as shown below. Move the mouse to any item and the preview window will be displayed on the right. This list gives choices to the user to begin displaying the sequence from any item. Double click on the desired item to start sequence mode.



After the sequence is started, users can still change the split mode by clicking on the display mode icons for 2*2, 3*3, 4*4 or 5*5. However, the initial split mode set in <Sequence> will remain the same. Note that icons for 6*6, 7*7 or 8*8 will not be accessible because they are not allowed to be shown in sequence mode.

The following functions are disabled in sequence mode:

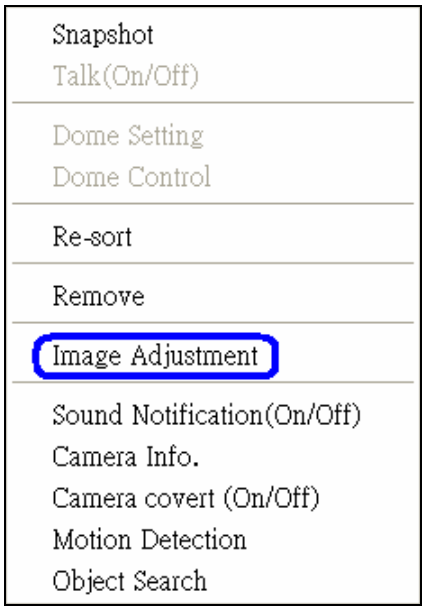
1. Right click to see channel menu
2. Zoom In/Out
3. Drag and drop channels or sites to the display grids
4. Remove any channel grids on the display windows

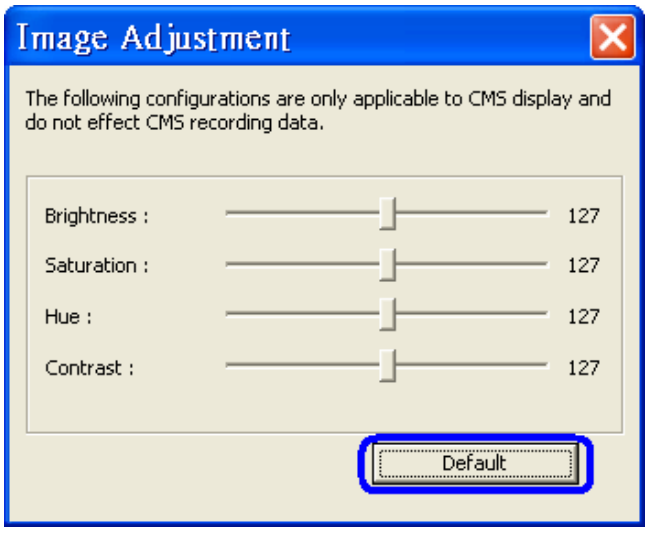
NOTE: If users enabled the <Event Full Screen> and an event is triggered while running the sequence, CMS will display event full screen. The sequence will not resume until event full screen ends.

Click on the <Sequence> icon or the <Live> icon to exit the sequence mode

7.6 Adjust the Image

Both CMS and CMS player provide image adjustment function. Double click on a channel, then right click on it. Select <Image Adjustment> from the pull-down menu, and the image adjustment window will be displayed. Users can change the brightness, saturation, hue, and contrast of the channel.





NOTE: The <Image Adjustment> option will only be available when viewing single-channel screen.

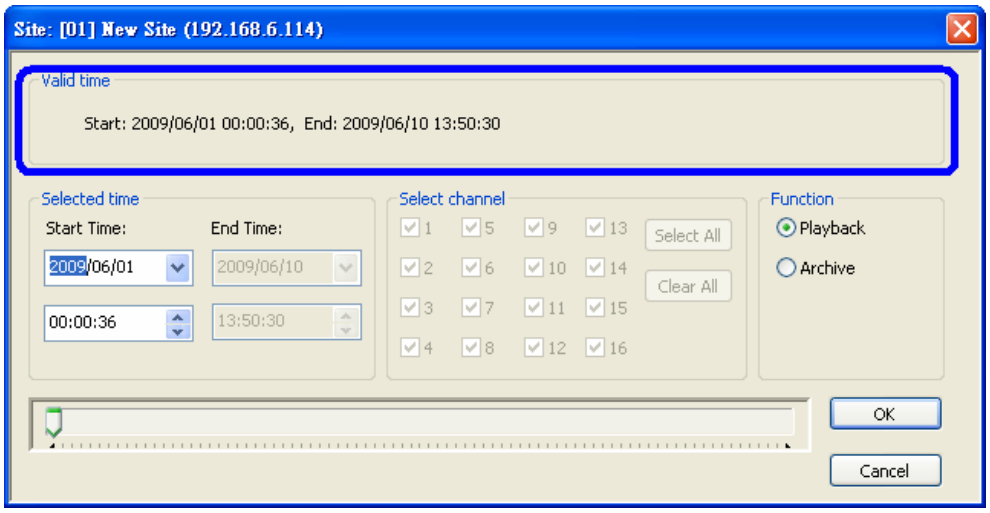
Click the <Default> button to reset the value to the original preset.

NOTE: The <Image Adjustment> function has no effect on the recorded video. Whatever changes made to the <Image Adjustment> will not be applied to the recorded video.

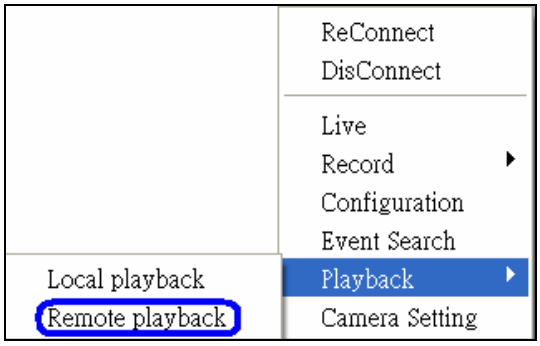
7.7 Playback Recorded Video

This function allows CMS users to retrieve and play videos stored in the connected DVR. Click on the <Playback> icon, a window will be displayed as below.

<Valid Time> indicates that the connected DVR starts recording from a certain period of time and ends at a certain period of time.



The other way to display the above windwo is to right click on the site in the site tree and select <Playback> → <Remote Playback> from the pull-down menu.

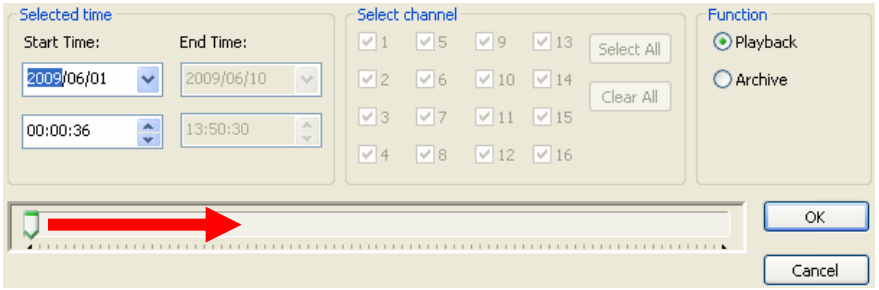


Playback the video stored in HDD of the connected DVR

Follow steps below to playback the video stored in the connected DVR.

Step 1. First select <Playback> in "Function" area.

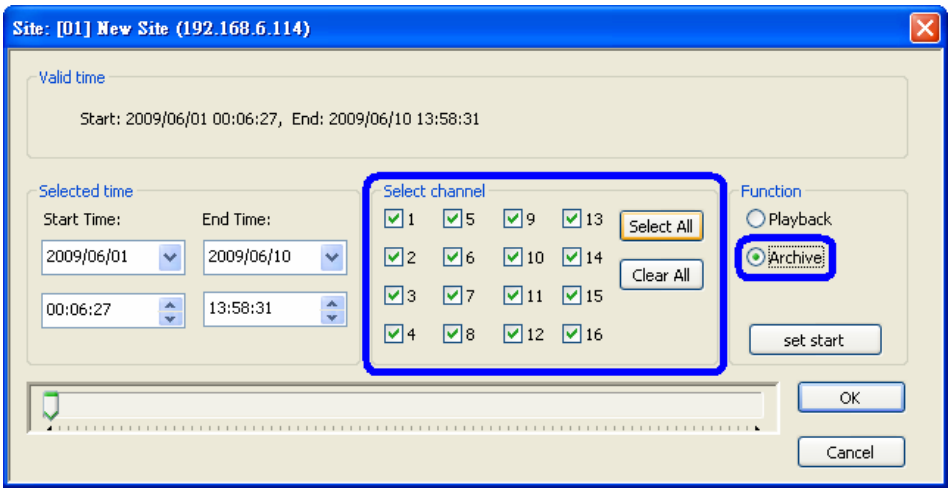
Step 2. Specify the starting time for playback in "Selected time" area or by moving the arrow of the slider bar at the bottom. Then click <OK> to playback the video.



Save the *.drv files to the local computer

Follow steps below to save the video to the local computer.

Step 1. First select <Archive> in "Function" area. Then "Selected channel" area will be available for users to choose desired channels.



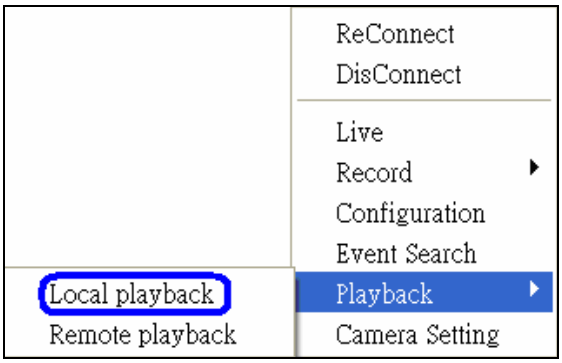
Step 2. Specify the Start Time in "Selected time" area and click <set start> in "Function" area. Then specify the End Time and click <set end>. Alternatively, use the slider bar to select start time and end time. Click <OK> and specify the filename of the DRV file. Then CMS will start to download the video data. Close the <Archive> window to exit.

Playback video stored in the HDD of local computer

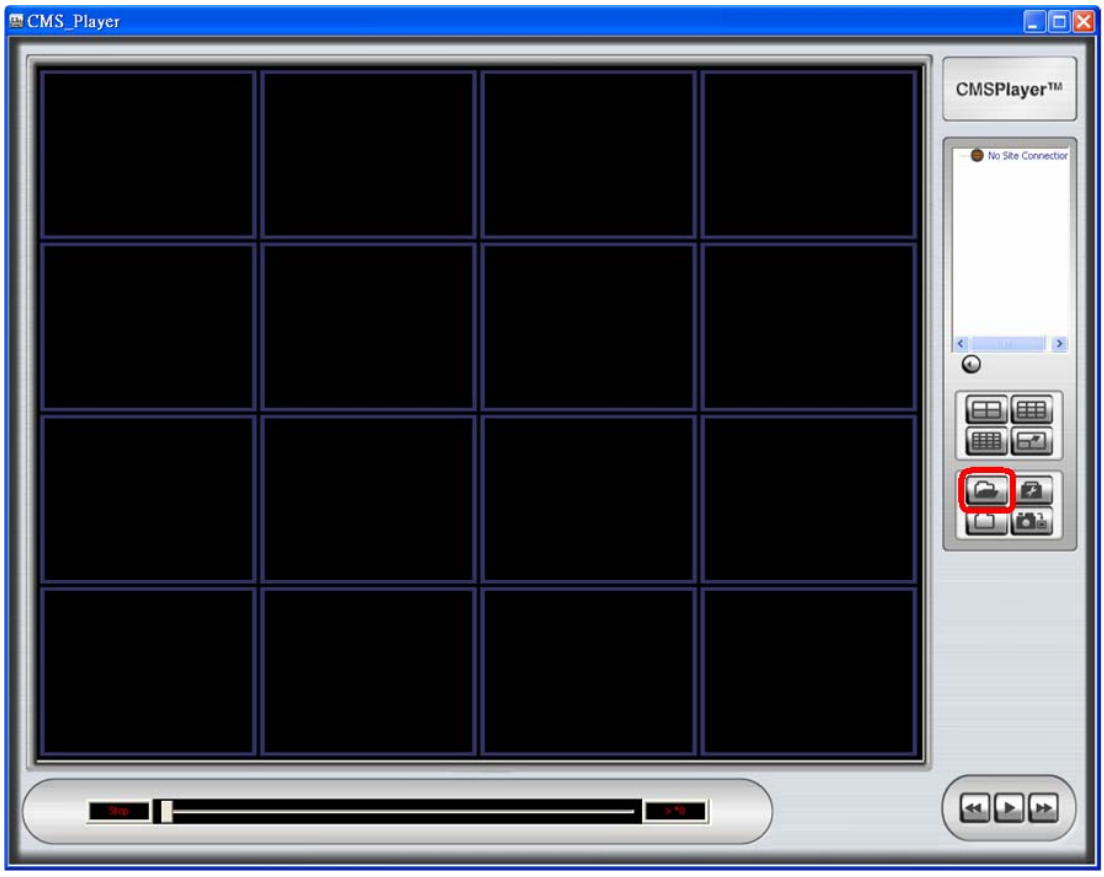
If users wish to playback videos that have already been saved to the local computer, launch CMS Player.

NOTE: CMS Player can only be started up within CMS. If users try to start up the CMSPlayer.exe, an error message will be displayed.

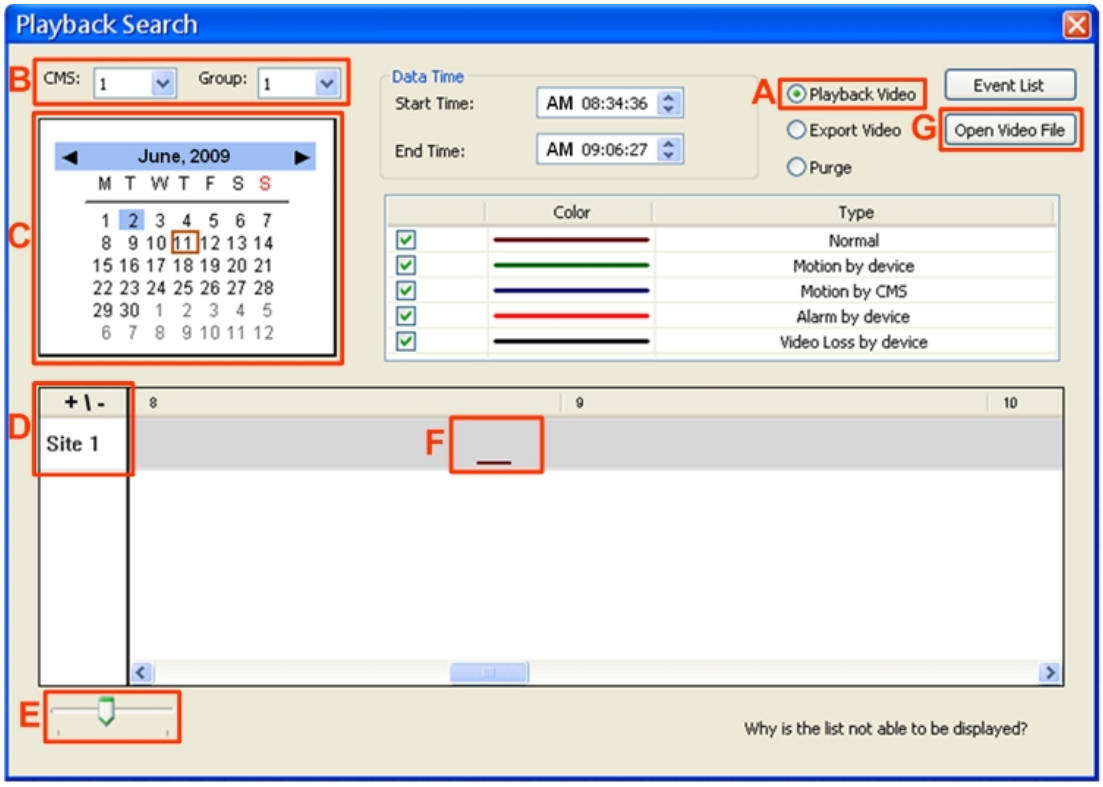
There are two ways to launch CMS Player. One way is to click on the <CMS Player> icon. Alternatively, right click on a site in the site tree and select <Playback> → <Local Playback>.



Then CMS Player will be displayed. Click on the <Open Video File> icon as marked below.



The "Playback Search" window will be displayed as below. The following steps will guide users to playback designated videos.



Step A. Select <Playback Video>.

Step B. Select CMS server and group number.

Step C. Select date of designated videos.

Step D. Select sites. Click on <+\-> to select or deselect all sites. The selected site will change to gray color.

Step E. Scroll the slider bar to zoom in/out the displaying time.

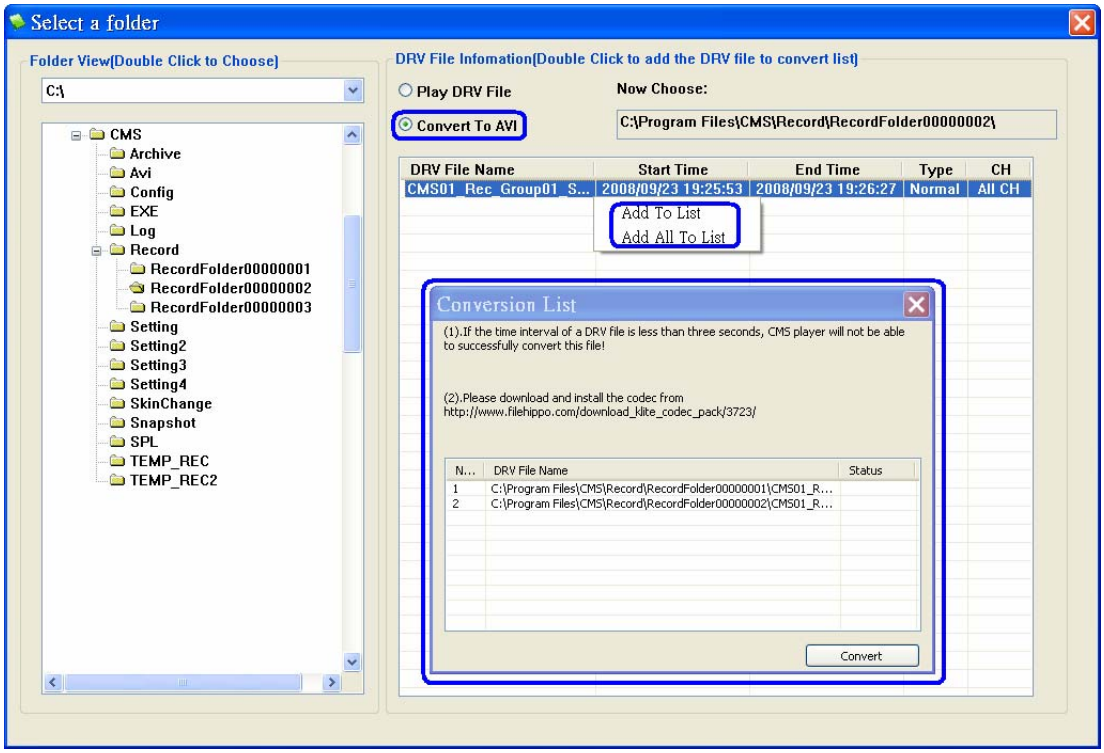
Step F. Point the cursor at designated time and double click to start playback the video.

Step G. Click on the <Open Video File> button to search for videos via file list. Users can also convert DRV files to AVI files here. Refer to the next page for instruction of conversion.

NOTE: The recorded video of IP camera can only be played back by CMS player. Some errors might occur if playing back with DVRPlayer.

Convert *.drv files to *.avi files

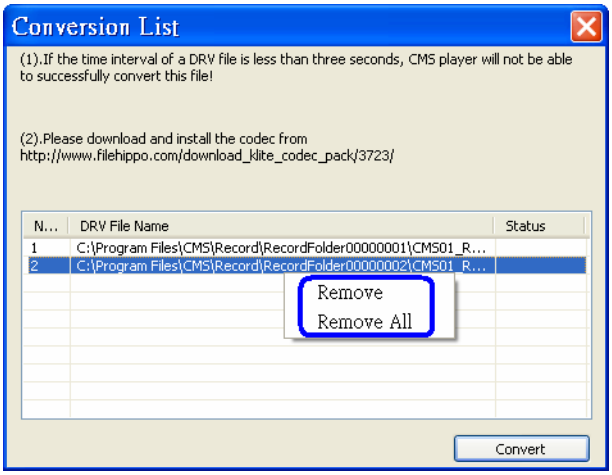
Click on the <Open Video File> button in the "Playback Search" window, then the "Select a folder" window will be displayed. On the top center of this window, select <Convert To AVI> and double click on the file which users wish to convert. A "Conversion List" window will pop up and the file will be added to the list. The other way to add files to the list is to right click on the file and select <Add To List> or <Add All To List>.



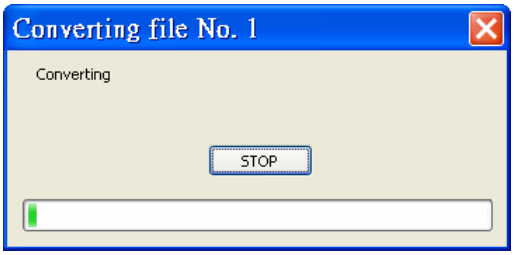
NOTE: The list can contain files from different folders.

The messages shown on the conversion list windows are very important. If the duration of a DRV file is less than 3 seconds, the file will not be successfully converted. In addition, a link is provided for users to download and install video codec in order to playback the converted AVI files.

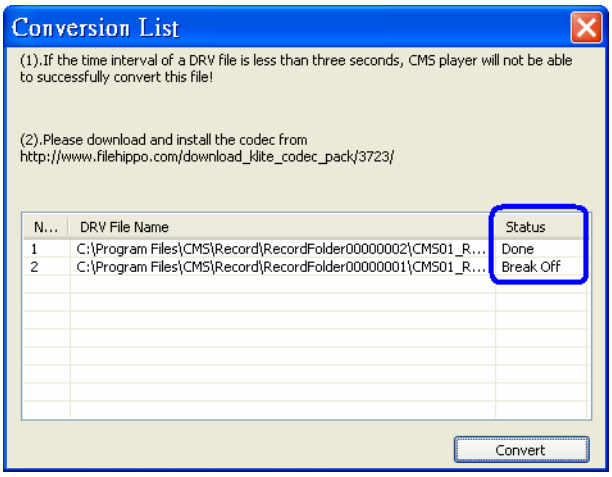
If users wish to remove any file from the conversion list, right click on the file and select <Remove> or <Remove All> to delete files from the list. Click <Convert> to start conversion of files on the list.



A small window will be displayed as below to show the progress of conversion. If users wish to terminate the conversion, click <STOP> to abort.



If the conversion is aborted, the status column will show "Break Off" for the specific file aborted. If the file failed to be converted, the status column will show "Fail".



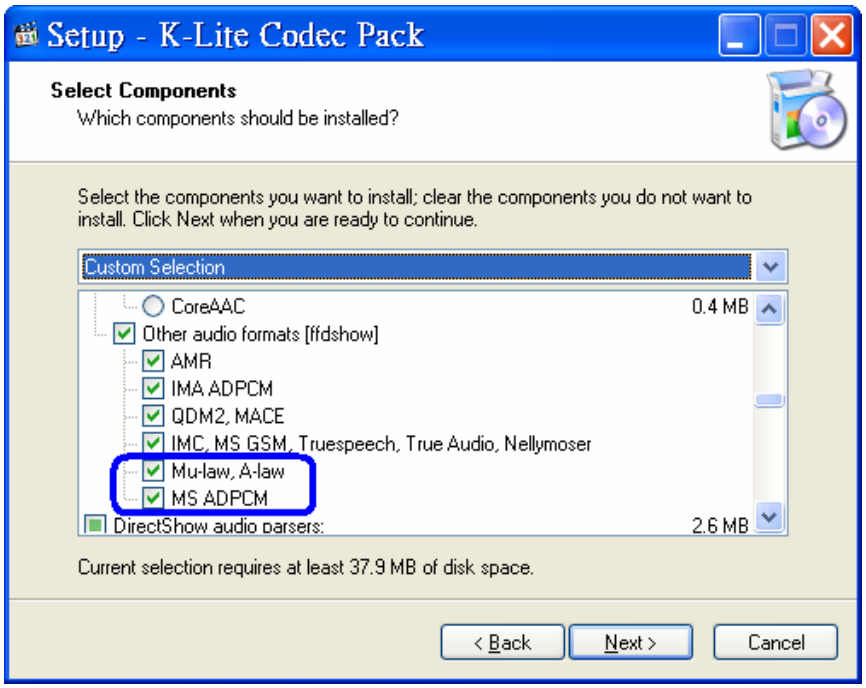
If the conversion is completed, the message as on the right will be displayed. The converted files will be stored in the folder specified in file path setting of CMS Player.

For more information about other CMS Player operations, please refer to the **Appendix A**.

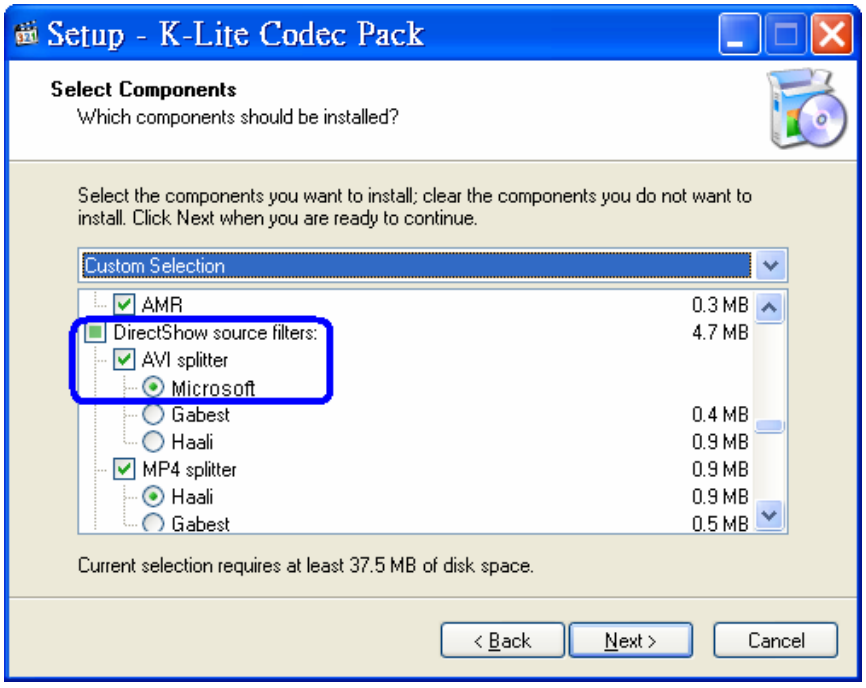
Install required codec to playback converted AVI files

In order to correctly playback converted AVI files, install K-Lite Codec Pack and select codec options as described below.

1. Check <Mu-law, A-law> & <MS ADPCM> under <Other audio formats (ffdshow)>.



2. Check <Microsoft> for <AVI splitter> under <DirectShow source filters:>.

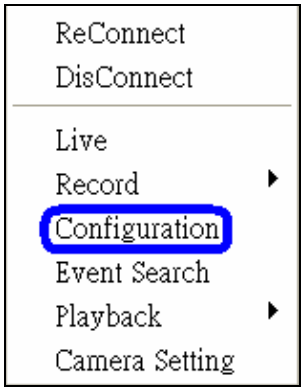


7.8 Configure the OSD Menu of the Connected Site

The OSD menu of the connected site contains a list of items that are used to configure the connected site.

Right click on the **Site** and select <Configuration> to open the OSD menu.

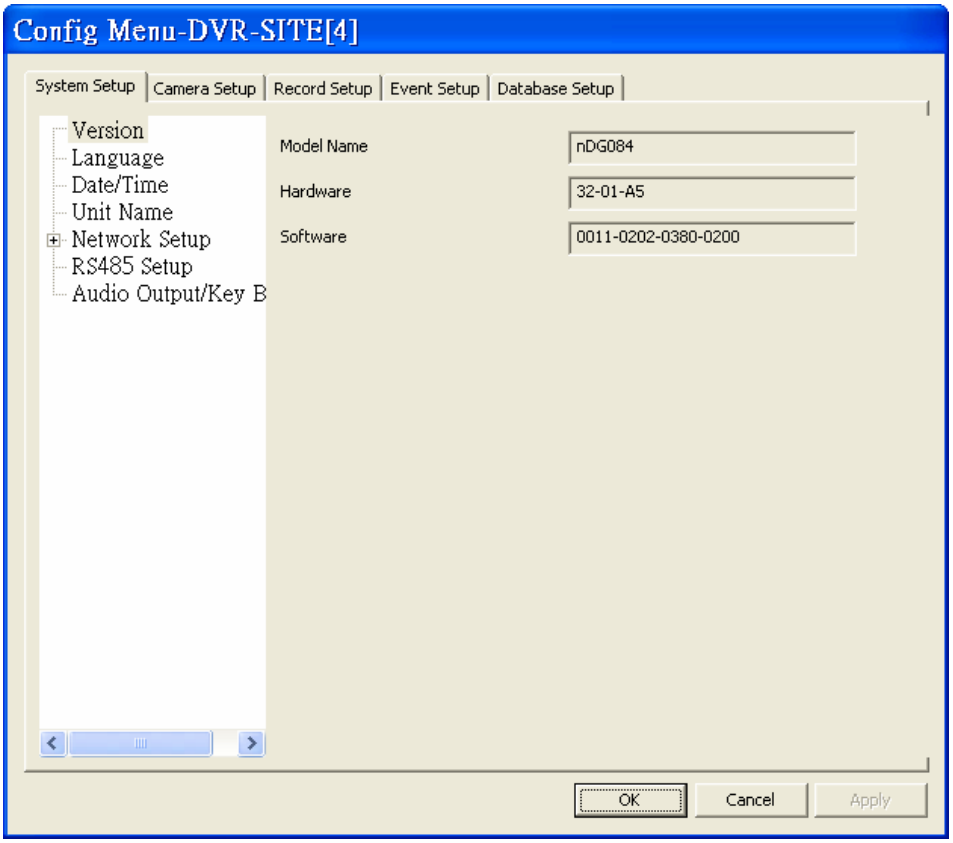
When the mouse was not clicked or the keyboard was not typed for 5 minutes, the configuration window will be closed automatically.



The OSD menus for DVR, IP camera, and Video Server are different from each other. Refer to the following for examples.

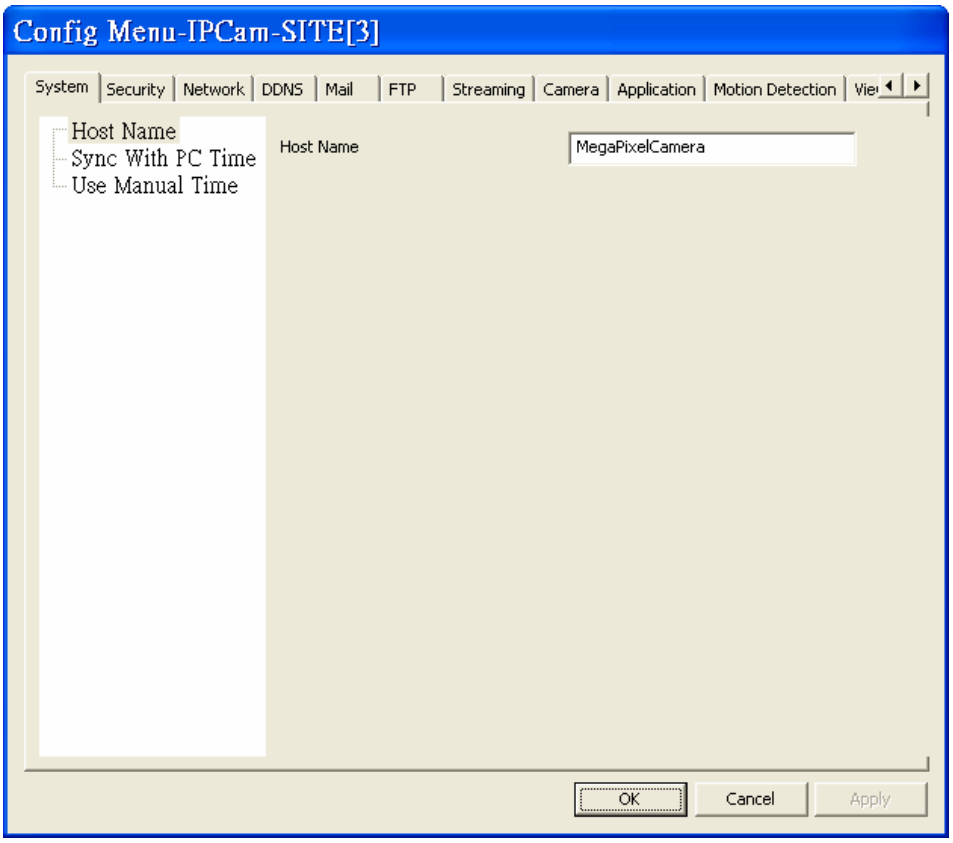
OSD Menu of a DVR

The pop-up window will show the OSD Menu of a DVR. Some items are not available in CMS setting condition. Please refer to User's Manual and OSD Setup Manual of the DVR for detail instruction.



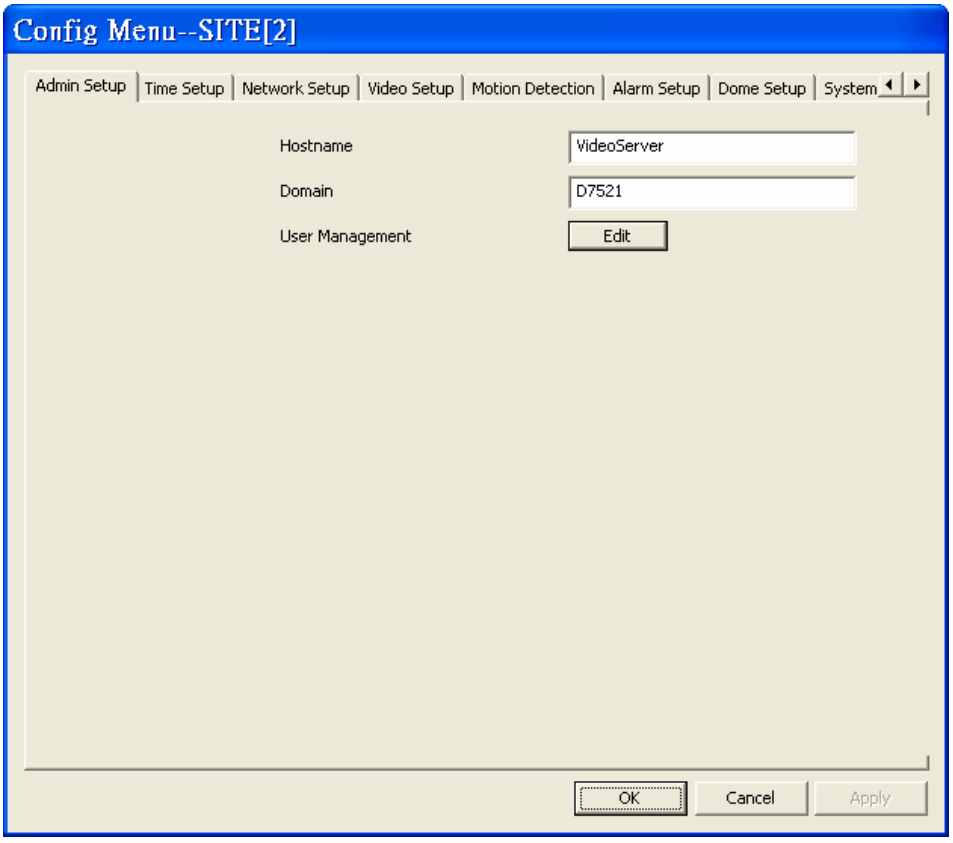
OSD Menu of a IP Camera

Please refer to User's Manual of the IP Camera for detail instruction.



OSD Menu of a Video Server

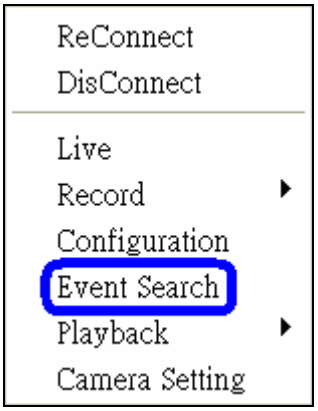
Please refer to User's Manual of the Video Server for detail instruction.



7.9 Search for Event Videos

CMS is capable of searching, playing back, and archiving the event videos.

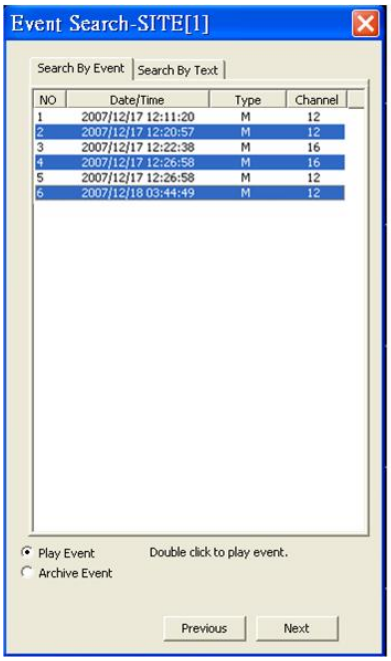
Right click on the **Site** and select <Event Search> and the <Event Search> window will be displayed.

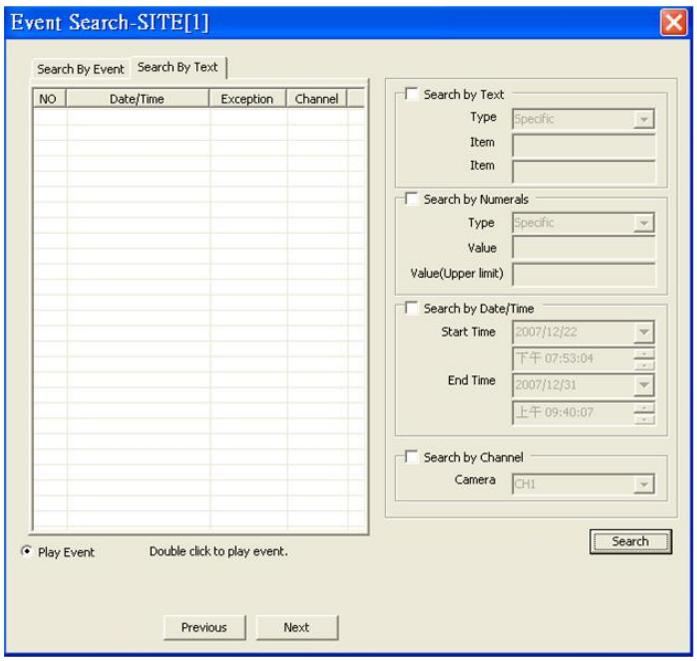


Users can search the event list of the connected DVR. If users have installed the POS module, users can either search by event or text.

To play the event video

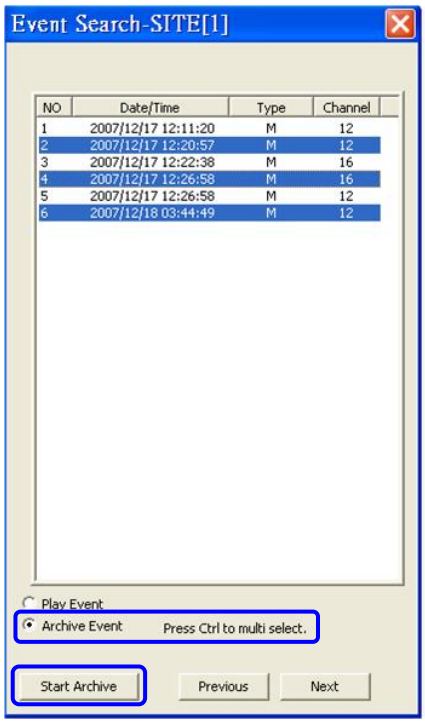
Select <Play Event> and double click on any item to view the playback of the event.

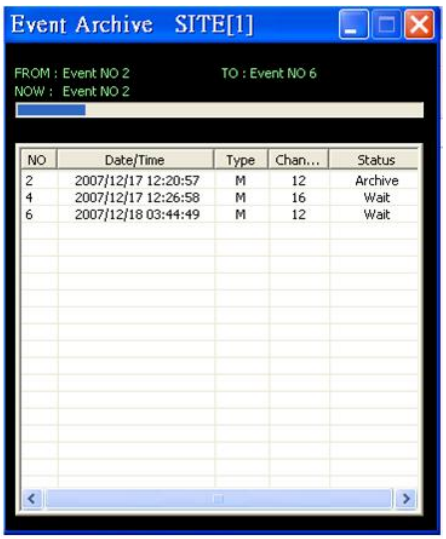




To archive the event video

Select <Archive Event> and press the "Ctrl" key to select multiple event videos to be archived. The maximum items can be selected is 1,000, which is the capacity of the list.



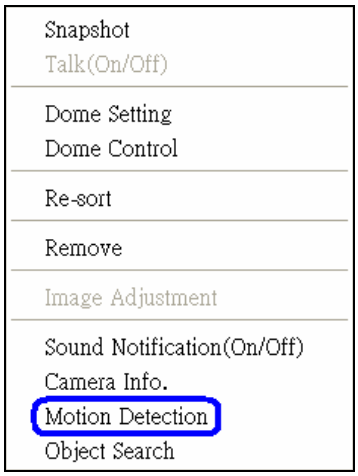


Click on <Start Archive> and an <Event Archive> window will pop up. The progress bar shows current downloading position. The status column shows the event is under "Archive", "Wait", or "Done" condition.

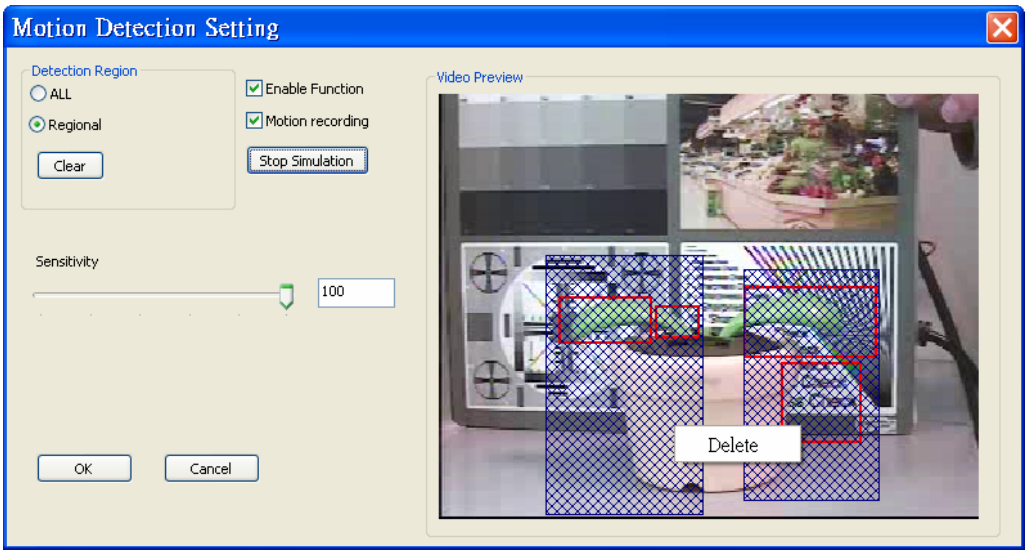
NOTE: The event archive or normal video archive for different sites can be performed simultaneously.

7.11 CMS Motion Detection

Users can setup motion detection at CMS site individually. Right click on a desired grid and select <Motion Detection> from the pull down menu. The motion detection setting window is shown as below.



Users can choose to monitor the complete screen or select up to 8 boxed areas after clicked on <Regional>. Click on <Clear> button to delete all selected areas. Alternatively, right click on any selected area to delete it individually.



Enable Function: Check on it to start monitor motion detection.

Motion recording: Check on it and CMS will record event video when motion is detected. The length of event video will follow <Event Recording Duration> specified in Event setting.

Start Simulation: Click on it to start simulating motion detection. As shown above, red boxes will mark the motion areas.

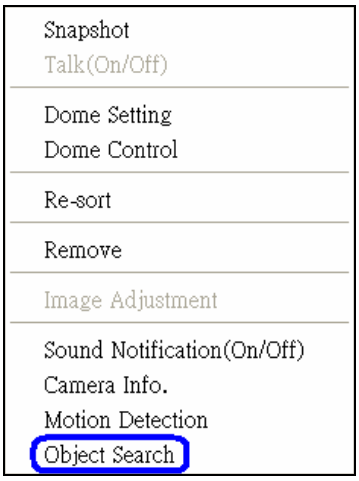
Stop Simulation: Click on it to stop simulation.

Sensitivity: Setup a desired sensitivity level.

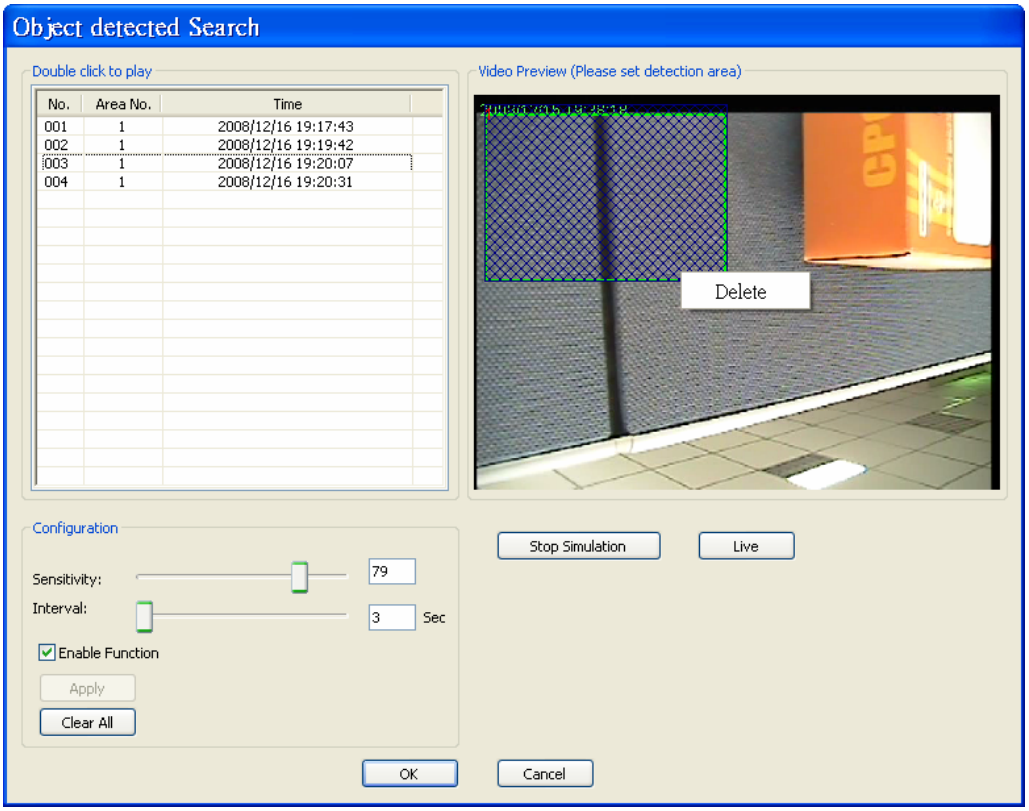
Click on <OK> to apply the settings, or click on <Cancel> to disregard and return to Live mode. The live monitoring screen will show the blue boxes.

7.12 Object Search

The purpose of object search function is for users to keep an eye on the important object. Right click on a desired grid and select <Object Search> from the pull down menu. The object detected search window is shown as below.



Users can setup at most 8 monitoring areas. The boxes will be invisible in Live mode. Click on <Clear All> button to delete all boxes. Alternatively, right click on any single box to delete it individually.



Sensitivity: Setup a desired sensitivity level.

Interval: The time specified here is for determining the lost of objects. If an object is removed from the selected areas for more than the time specified here, lost of object alert will be triggered.

Enable Function: Check on it to start monitor motion detection.

Apply: Click on it to save and apply settings in the configuration section.

Clear All: Click on it to clear all selected boxes.

Start Simulation: Click on it to start simulating object detection. As shown in the previous page, green boxes will mark the lost of objects.

Stop Simulation: Click on it to stop simulation.

Live: Click on it to restore the Video Preview frame to live image.

Lost of Object Alerts

When lost of object alerts are detected, restore the object detected search window and the list on the left-hand side will show area number and time of the lost of object alerts.

If the connected site is a DVR, double click on any item to playback video that is 15 seconds before the alert triggered. However, if the video is not added to the database yet, an error message will be displayed.

NOTE: Only the configuration of area positions, sensitivity, and interval will be permanently saved. The default image will be replaced by the initial image every time when CMS restarts. Therefore, please check the configuration every time CMS starts up.

NOTE: CMS Player also has object search function, and it is slightly different from what's in CMS. Refer to the **appendix A** for more details.

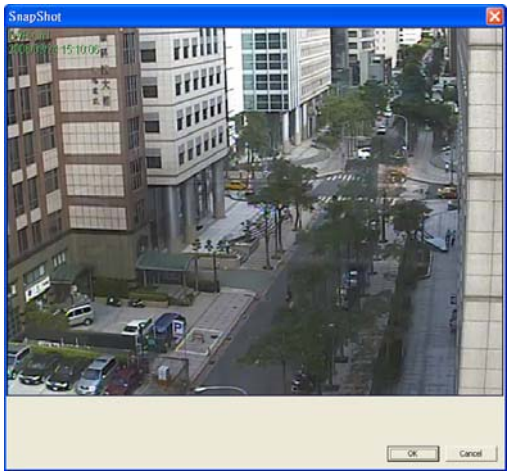
Click on <OK> to apply the settings, or click on <Cancel> to disregard and return to Live mode. The selected boxes will not be shown on the live monitoring screen.

NOTE: The "Motion Detection" function and "Object Search" function can be enabled simultaneously.

7.13 Take a Snapshot

The Snapshot function is a simple screen capture tool. When users click on the <Snapshot> icon, it will capture the screenshot of the window that users are currently viewing. Users can save the screenshots to the default path "\CMS\Snapshot\" or the folder that users have previously set in the file path. Please refer to <Setup the File Path> for more information about changing the file paths.

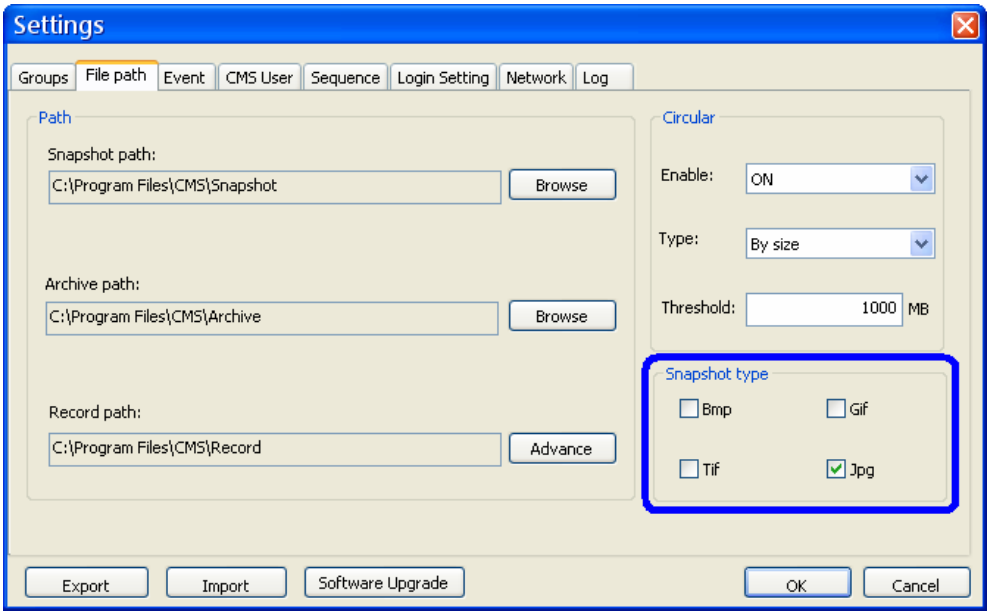
There are 2 ways to take the snapshot. One is to click on the <Snapshot> icon, and the snapshot window will be displayed. Select <OK> to save the file.



The other way is to right click on the window, and select <Snapshot>. Note that it will only capture the image of the selected channel. The file will be saved without displaying the image.

NOTE: The default image format is *.jpg. If users have selected more than one file types and took the snapshot, users will get more than one files of the same snapshot image.

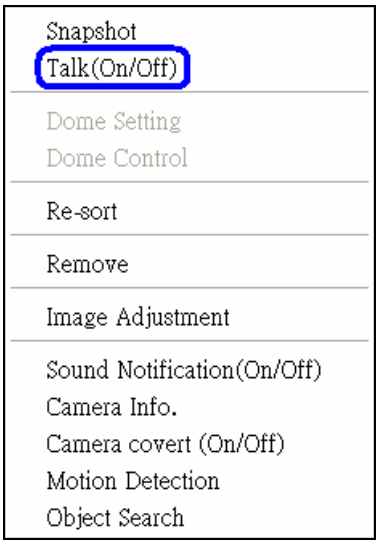
Please go to <Settings> to setup the snapshot file type.



7.13 2-Way Audio Talk

2-way audio talk function enables the user to communicate with the camera side. Currently the only supported camera types are NH Series IP Camera and Video Server.

Right click on the channel and select <Talk(On/Off)> from the pull-down menu.



If the talk function is successfully enabled, "Talk" will be shown on button left of the image. The user can speak through the microphone now to communicate with the camera side.

Currently supported 2-way audio types are:

Camera Type	Audio Type
Video Server	PCM audio type
NH Series IP Camera	ALaw and uLaw audio type

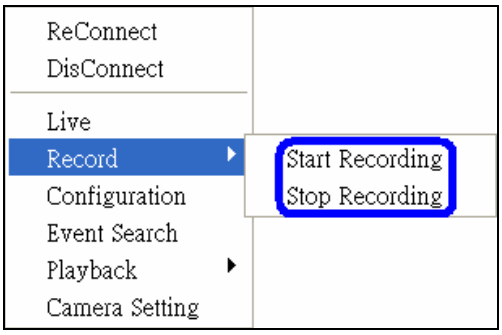
NOTE: RTP OVER RTSP Stream Protocol of NH Series IP Camera and all other audio types currently do not support 2-way audio.

NOTE: The communication mode is one to one. Broadcasting function currently is not available.

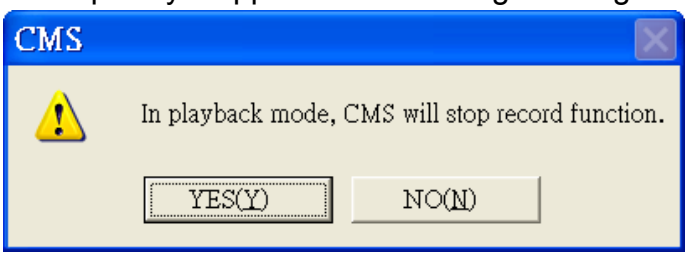
7.14 Instant Record Function

While the videos are usually recorded to the connected DVR, the user can choose to instantly record live and playback video clips to the local computer as an option.

Right click on the **Site** and select <Start Recording> to start recording, and <Stop Recording> to stop recording.



While recording video and the mode is change from "Live" to "Playback", the recording will be temporary stopped. The following message will be shown:



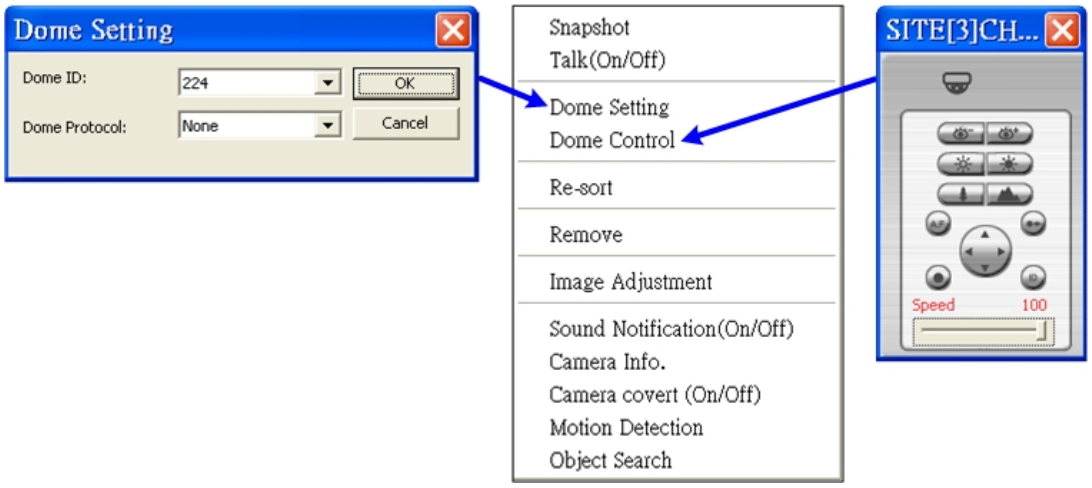
When returning from "Playback" mode to "Live" mode, the recording will be resumed from stopping point.

When the channels are being recorded, the title of the channels will show a capital letter "R" ([R]) at the end. The recorded files will be saved to the default folder "\CMS\Record\".

NOTE: If the connection to the recording site is disturbed and then reconnected, the recording will be terminated without resumption.

7.15 Dome Setting / Dome Control

The users can also set/control the dome camera in CMS. Right click on the channel where a dome camera is properly installed. Refer to the following picture to see how they look like.



Dome Setting:

Select <Dome Setting> to setup the Dome ID or Dome Protocol. Note that dome protocol changed at this interface is only temporary. To permanently change dome protocol, please modify it in the configuration.

Dome Control:

The function of each button on the <Dome Control> panel is described below.

A.F. (Auto Focus)

Click on to focus the camera automatically.

Set/Go Preset Point

Click on to set a present point, and to go to the preset point.

ID

Click on to setup the Dome ID/Protocol. This function resembles to the <Dome Setting>.

Focus

This is used to manually focus on the objects. Click on the <Focus Near> / <Focus Far> icons to adjust the focus.

Iris

This is used to setup the iris. Click on the <Iris Open> icon let in more light, or the <Iris Close> icon to reduce the light.

Zoom

This is used to zoom in/ out to the object. Click on the <Zoom In> / <Zoom Out> icons to adjust. It can also be adjusted by scrolling the wheel of the mouse. CMS zoom function will be disabled in dome camera control mode. Scroll toward the user to zoom out and away from the user to zoom in.

Direction Button

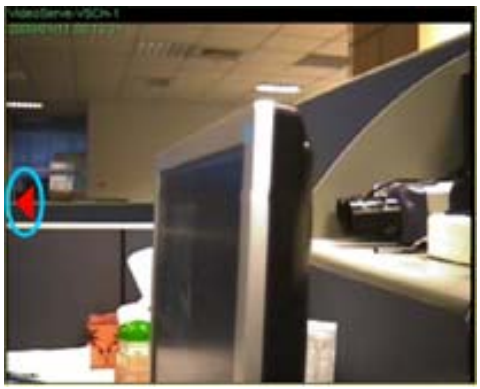
Click on the arrows to pan and/or tilt the dome camera.

Speed Slider Bar

The slider bar is used to adjust the speed of the pan/tilt movement. 0 is the slowest and 100 is the fastest.

Mouse Control

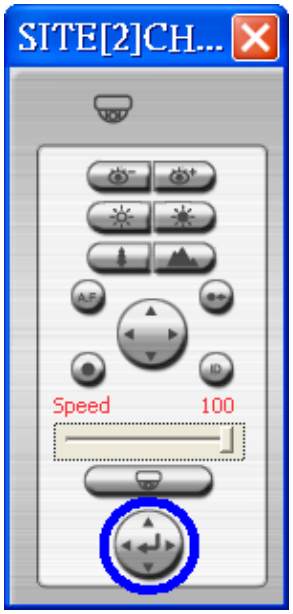
If the mouse is moved to the top/ bottom/ left/ right edge of the screen, a red triangle as in the picture on the right will show up. At this time left clicking the mouse can move the screen toward the direction where the red triangle points to. Zoom In/ Out using the scroll wheel of the mouse.



NOTE: The <Dome Control> panel is different if the dome camera is connected through a Video Server. Refer to the following figures for detail information.

There is an extra button (as circled in the picture on the right) that allows the user to enter and edit the OSD setup menu of the Video Server Camera.

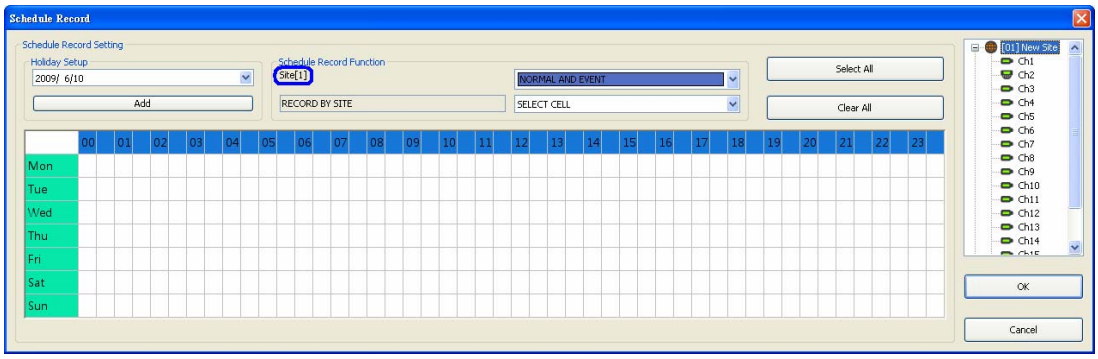
Click on <Enter> at center of the button to display the OSD setup menu on the camera screen. Then click on the arrows to make selection and changes.



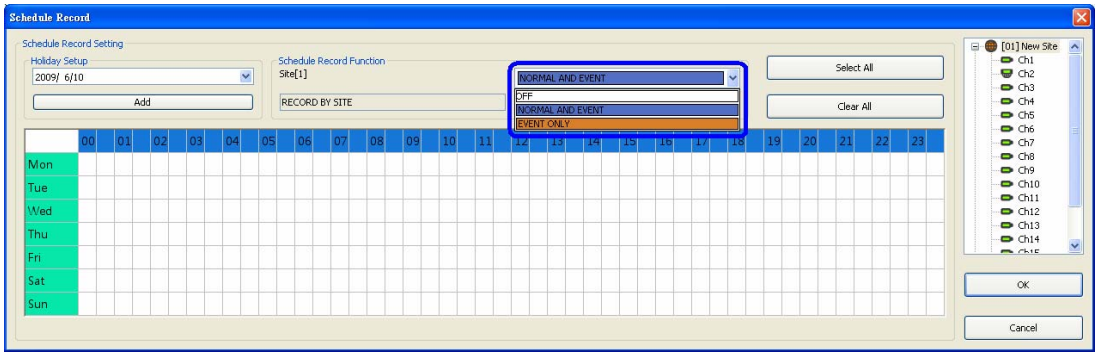
7.16 Schedule Record Function

Users can schedule specific time to record the videos to the local computer. Schedule Record window will be displayed after clicked on the <Schedule Record> icon.

The current setting site will be shown on the top of the Schedule Record window, as circled in the picture below.



The scroll-down menu circled below shows the recording types.

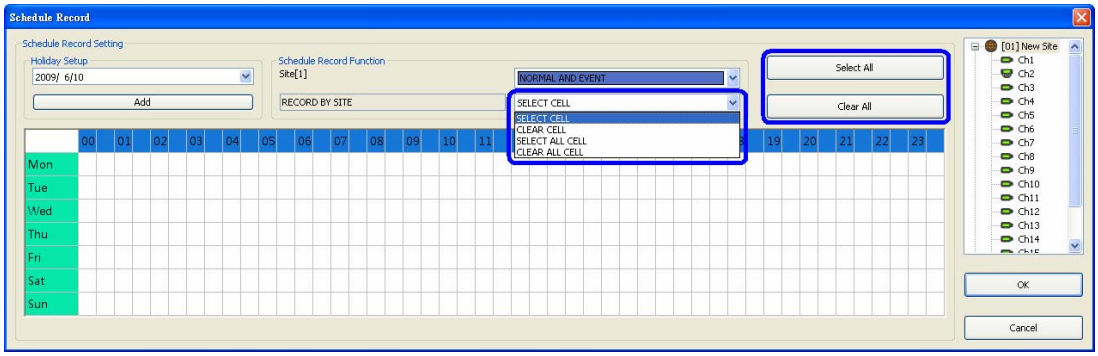


<OFF>
Select this to switch off the schedule record function.

<NORMAL AND EVENT>
Schedule to record both the normal and event videos within the selected time frame.

<EVENT ONLY>
Schedule to record only the event videos within the selected time frame.

The scroll-down menu circled below shows the selecting options.



<Select Cell>
Choose this to select any cell from the table.

<Clear Cell>
Choose this to clear any cell from the table.

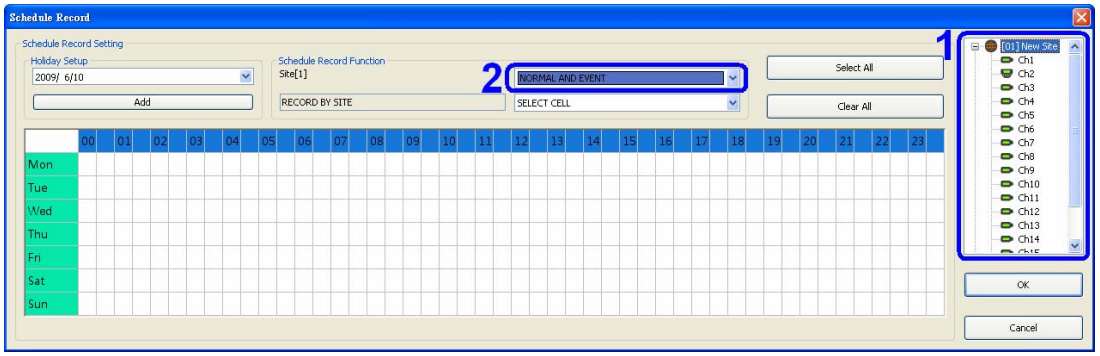
<Select All Cell>
Choose this to select all cells from the table.

<Clear All Cell>
Choose this to clear all cells from the table.

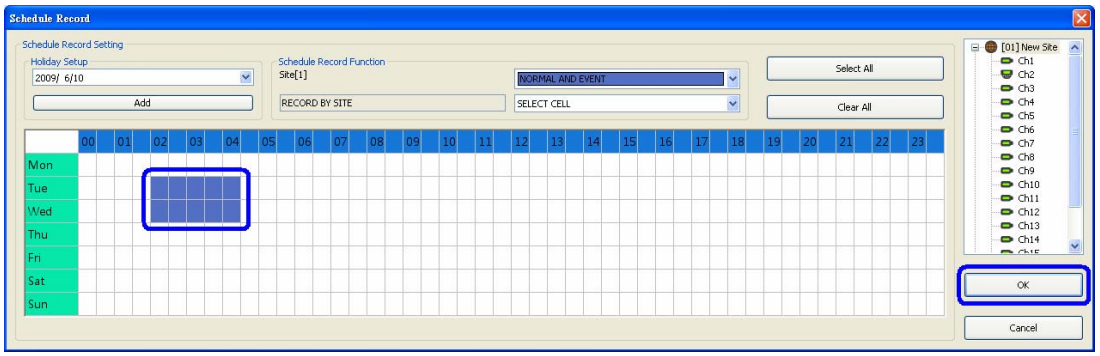
Follow steps below for an example of setting schedule record for CMS.

Schedule Recording Times

Step 1. Select a site or a channel from the box on the right by a single click. When a site is selected, the same setting of schedule record will be applied to all channels. Click on a channel to set unique schedule record for the particular channel. In this example, schedule of a site will be set. Select a site in box 1, and set the recording option to <NORMAL AND EVENT> in box 2.



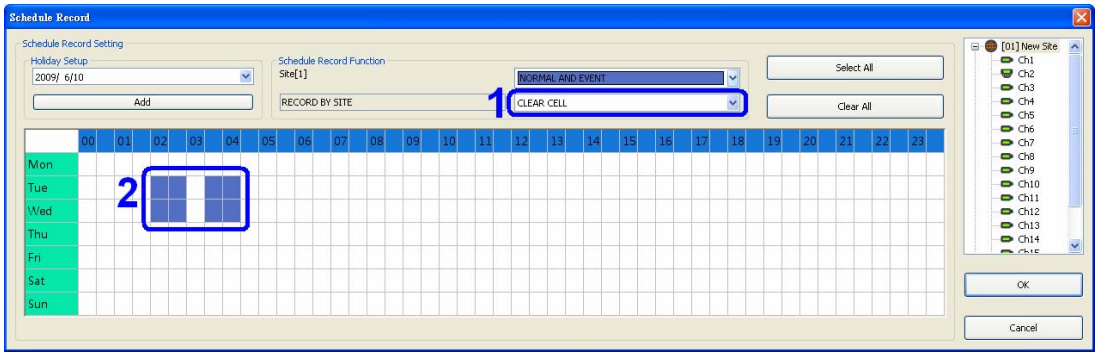
Step 2. Assuming that the site will be scheduled to start recording video from 2:00 to 4:30 on Tuesday and Wednesday. Since the duration of each cell is 30 minutes, click on the cell under 02 for Tuesday and drag to the cell under 04 for Wednesday; and the color of the cells will be changed to purple indicating that these cells are going to record both normal and event videos.



Step 3. After the time frames are selected, click <OK> to save and exit the Schedule Record window.

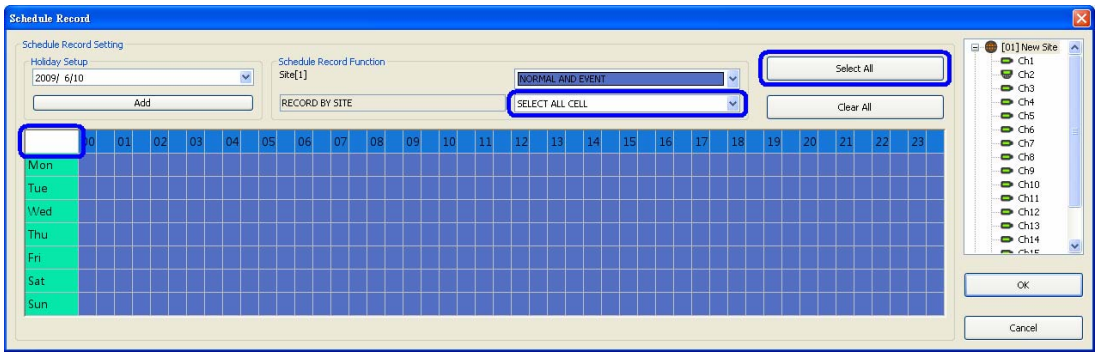
Cancel Scheduled Recording Times

If the user want to cancel a time frame from selected schedule, for instance, 3:00~3:30, set the selecting option to <Clear Cell> in box 1. Click and drag the cells under 03 from Tuesday to Wednesday. The cells will be blank which indicates that CMS is not going to record anything. Click on <OK> to save and exit the Schedule Record window.



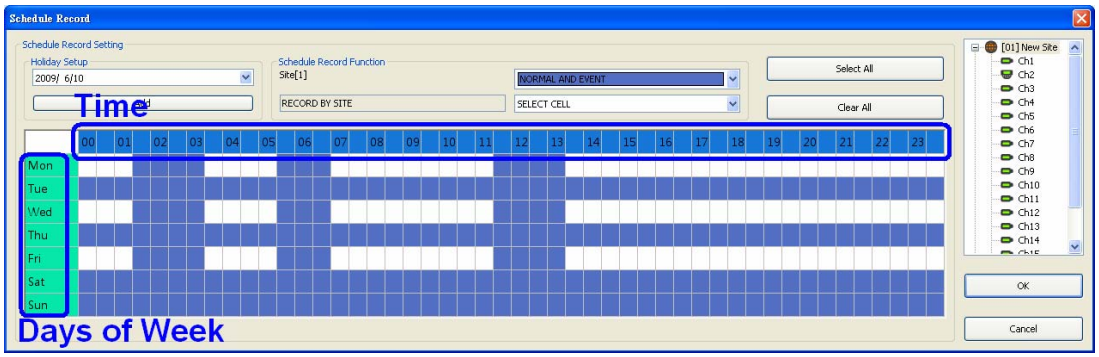
Select/Clear All Cell

If users want to set the schedule to record at all times, click on the circled blank cell located on top left corner of the table or set the selecting option to <Select All Cell> or click on <Select All> button. If users want to reset the schedule of the site, set the selecting option to <Clear All Cell> or click on <Clear All> button. Click on <OK> to save and exit Schedule Record window.



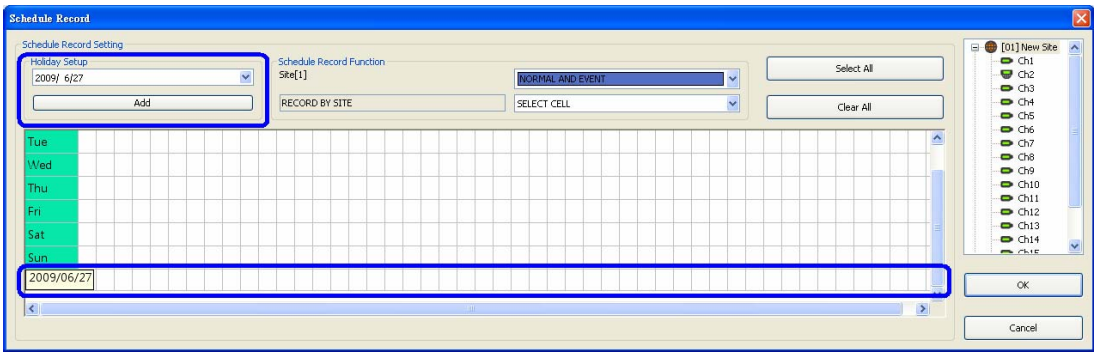
Select/Clear Cell by Date/Time

Another way to select or clear time frame is by click on the Day or Time tabs. For example, when users click on <Tuesday> tab, the color of all Tuesday cells will be changed and the site is scheduled to record normal and event videos every Tuesday. When users click on 5:00~5:30 tab, color of all 5:00~5:30 from Monday to Sunday will be changed. Click on <OK> to save and exit Schedule Record window.



Special Schedule of a Specific Date

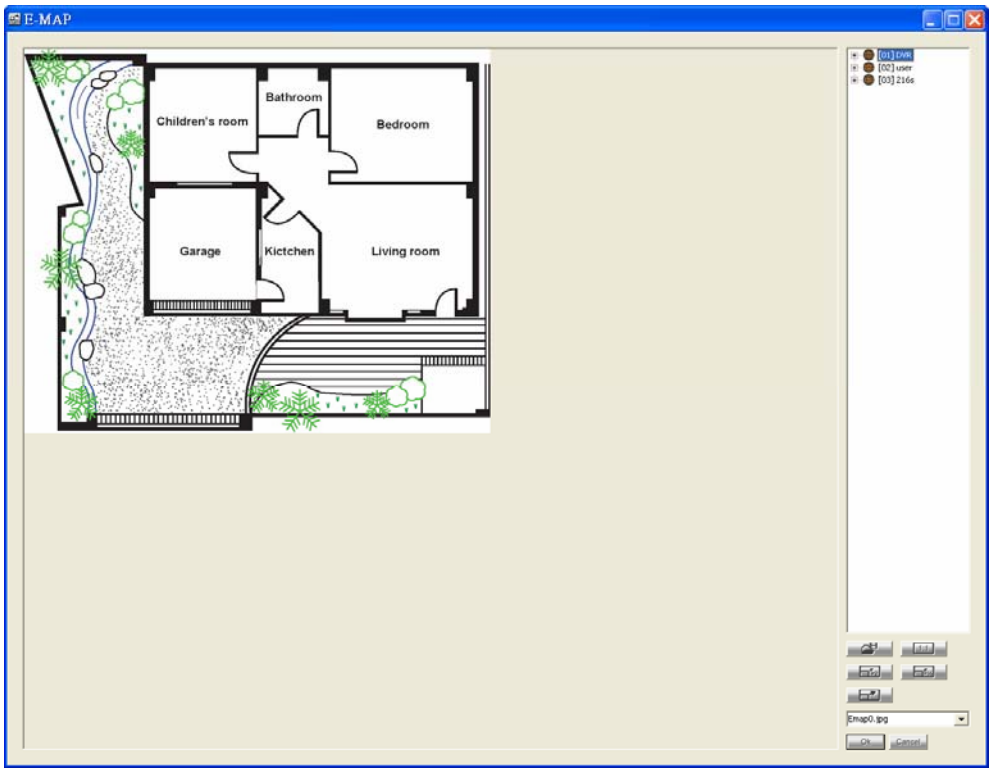
If users wish to setup a special schedule for a specific date, simply select a date from the pull-down menu of <Holiday Setup> and click on <Add> button. At the bottom of the <Schedule Record> window, users can find a new row of the added date as shown below. Setup the schedule for that date, and the schedule record will only run once for that special day.



7.17 E-MAP Function

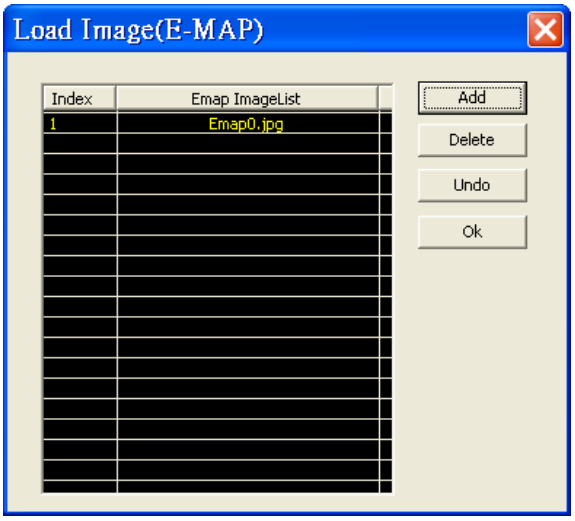
E-MAP is a function that allows users to illustrate the positions of the cameras on a self-selected image. Click on the <Emap> icon to open E-MAP window. Please follow the steps below to setup the E-MAP.

Step 1. First load an image file by clicking on <Load Image> icon.

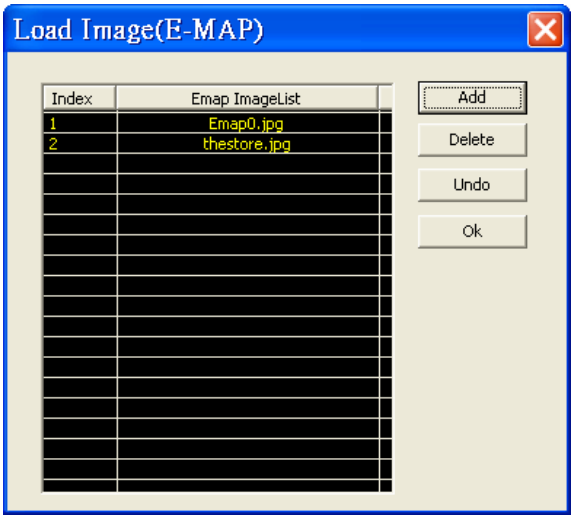


NOTE: The image shown in the window is the default picture. It will only be available when default is installed.

Step 2. The figure below is the Load Image window to add or delete images, and undo or confirm settings. Click on <Add> to add an image. Note that E-MAP only supports *.bmp, *.jpg, and *.gif files.

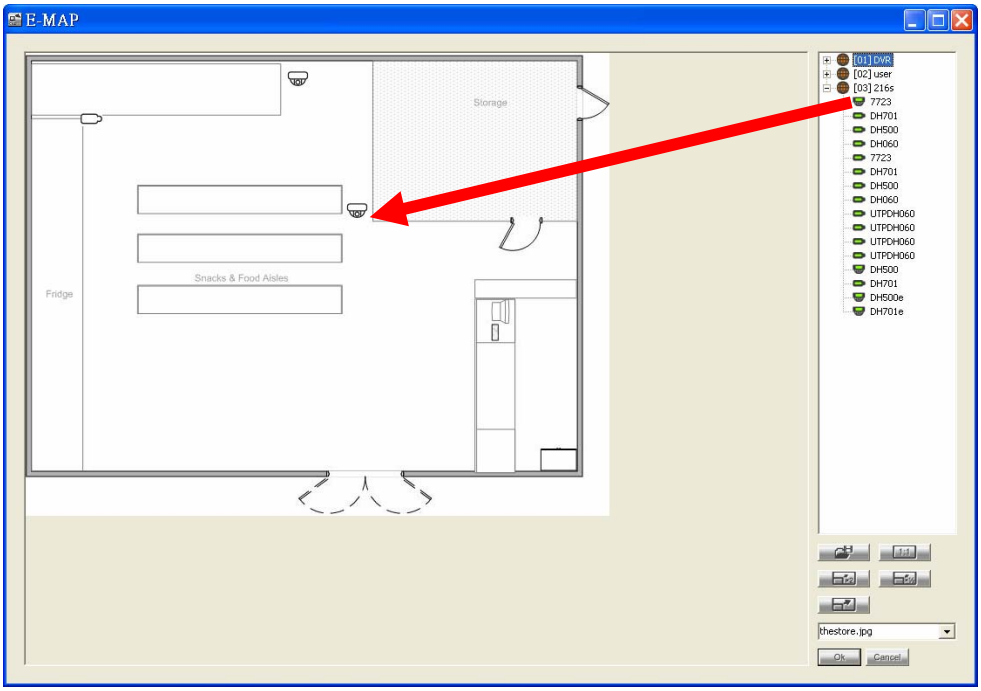


Step 3. After the image is added, the filename of the image will be displayed on the list. Index indicates the order, starting from "0", of the files. After the image is loaded, click <Ok> to confirm and save the setting.

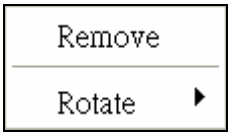


Step 4. Select the image file that was loaded to E-MAP from the scroll menu <Please Select Image>.

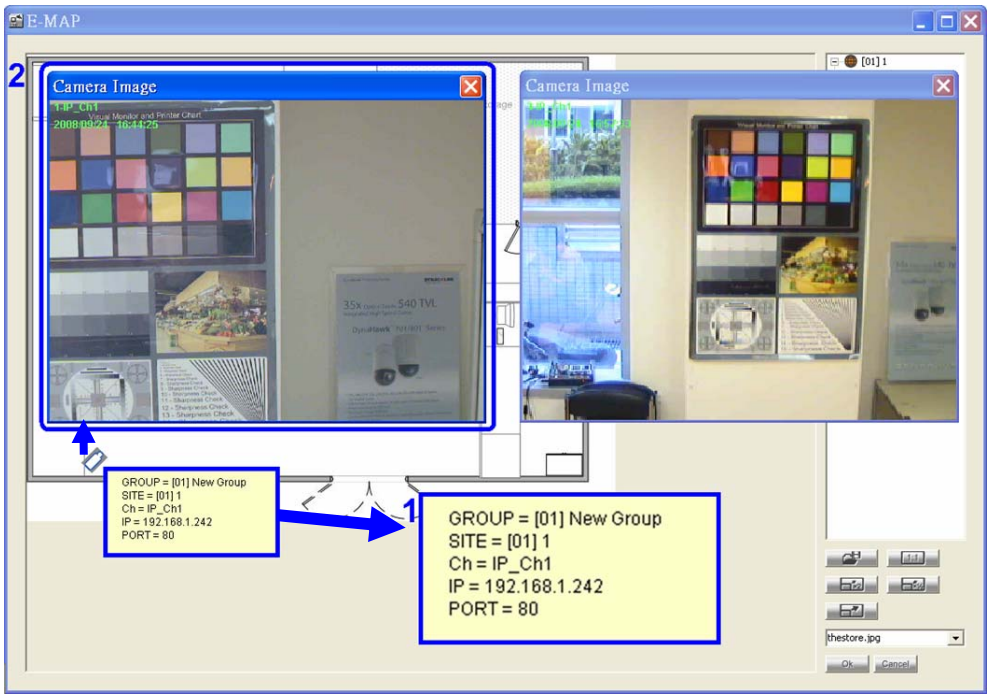
Step 5. The chosen image will be displayed in the E-MAP main window. The image of a grocery store is used in the following example. Drag and drop a channel from the site tree to any desired position of the image.



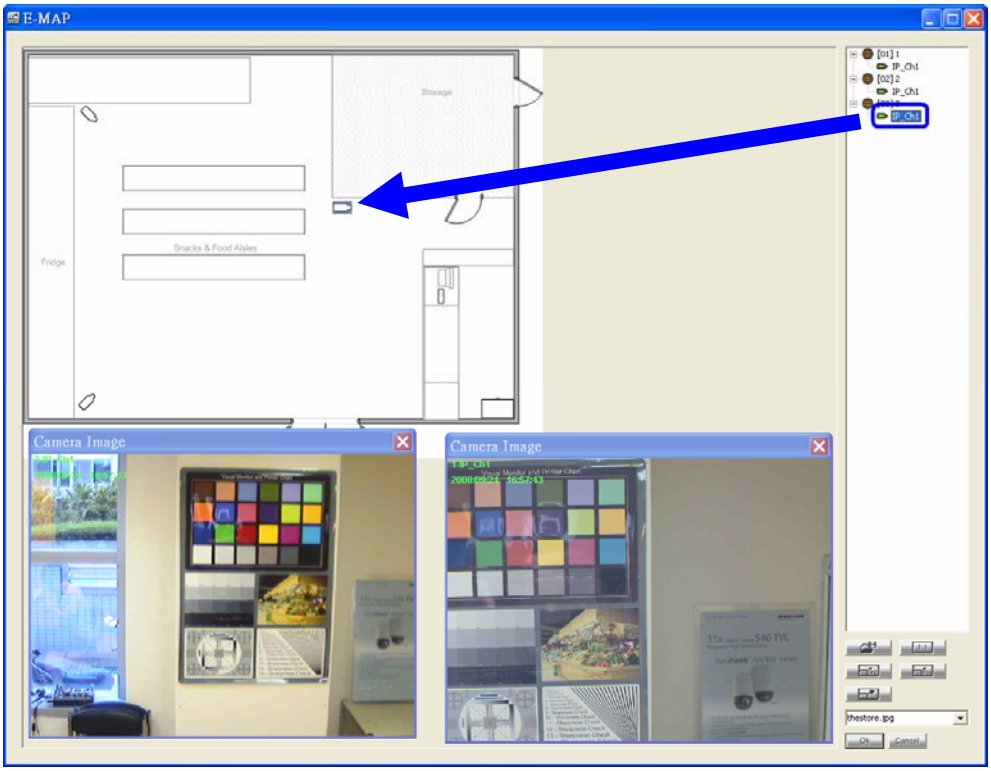
Right click on a camera icon can remove it or rotate its pointing direction, including North, Northeast, East, Southeast, South, Southwest, West, and Northwest.



Step 6. When the mouse pointer moves over a camera icon in the image, an information dialog box will be displayed as below picture marked #1.



Double click on any camera will display the live preview image of the camera. When a camera icon is clicked, the camera live preview window will be highlighted if it's been displayed, as above picture marked #2. Otherwise, the corresponding channel in the site tree will be highlighted as shown in below picture.



NOTE: The camera live preview window is limited up to three instances at the same time.

Step 7. Right click on the camera preview window to display the camera control menu. The menu items includes: Snapshot, Talk(On/Off), Dome Setting, Dome Control, Sound Notification(On/Off), and Camera Info.

Camera Icons:

There are three different types of camera icons in E-MAP: dome camera, fixed camera, and alert icons.

Dome Camera icon

Fixed Camera icon

Alert icon

Dome camera icon will be displayed when the selected camera is a PTZ (pan/tilt/zoom) dome camera. Fixed Camera icon will be displayed when the selected camera is a fixed camera. Alert icon will be displayed when an alert is triggered to the camera on the image. The alert icon will blink to attract attention.

Change Emap Size:

Users can adjust the display size of the image on E-MAP by clicking on the icons described as below.

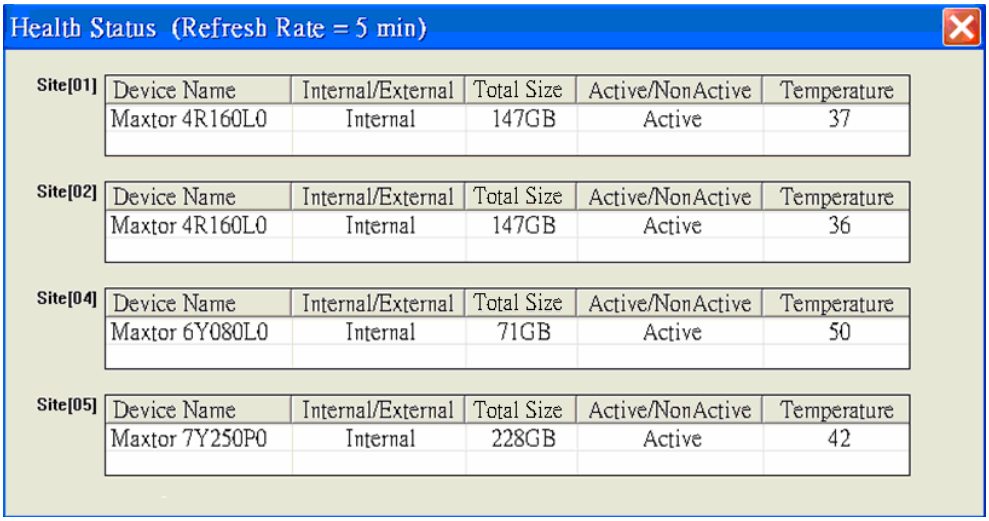
<Original>: To display the original size of the image.
<Double>: To double the size of current displayed image.
<Half>: To reduce current displayed image size by one half.
<Fill>: To adjust the image to fit display window (refer to figure on the right).

NOTE: If there is no image file loaded on the Emap window, an error message will be shown when clicked on any of the four buttons above.

NOTE: When the image is very large, or when users cannot see the entire image in the display window on the right, click on a channel in the site tree and the E-MAP will automatically move to the location of the selected channel.

7.18 Health Function

This is a function that verifies the HDD status of the DVR sites in current connected group. Click on the <Health> icon and a progress bar will be shown to indicate that the information is being retrieving. The following figure is an example. Note that since IP cameras do not have connected HDD, they will not be shown in the chart.



The information items shown in the chart are described as below:

Device Name

This item shows the model name of the HDD.

Internal/External

This item indicates whether the HDD is an internal or external device.

Total Size

This item indicates the total size of the HDD.

Active/Non Active

This item indicates whether the HDD is active or non-active.

Temperature

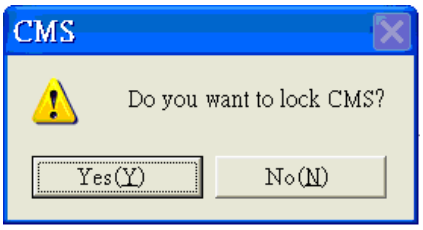
This item indicates the current temperature of the HDD in Celsius degree.

NOTE: Temperature data is not retrievable for some specific models. Under Temperature column, it will show "Not available".

7.19 Lock Function

The Lock function allows the user to protect CMS from unauthorized use when there is need to be away from the computer for a while. Closing CMS is not allowed and other functionality will be limited as described below.

Click on the <Lock> icon and a confirmation message will be displayed as on the right. Click "Yes" to confirm.



After the user clicked "Yes", the icon will be changed to show that CMS is currently being locked. When the user clicks unlock, the window as shown on the right will be displayed for the user to enter username and password to unlock.

To unlock, the following are two scenarios:

	Login Account	Unlock Account	Note
1	User	- Login User - Any Administrator	The access authority will still be User's limit.
2	Administrator	- Login Administrator	If password is changed, use new password to unlock.

When CMS is locked, windows control will be as the following two types:

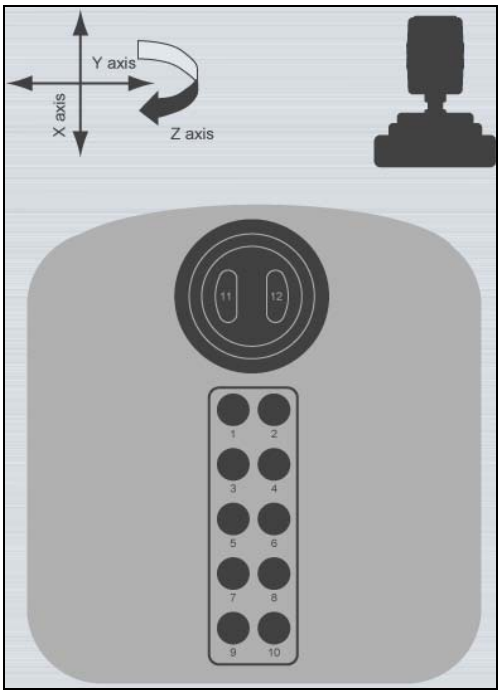
	Type	Example	Windows Control
1	Setting	Setting, Schedule Record, Emap, Dome Control, etc	The windows will be closed without saving changes. It is recommended to save settings before locking up CMS.
2	Monitoring	Archive, Alert, etc.	It is not allowed to close the window but just minimize it.

NOTE: If CMS is forced to be closed while it's locked, CMS system will still be locked when it is started up again.

NOTE: If the password of the current login account is changed, use the new password to unlock.

7.20 Joystick Control Function

When a joystick is connected, it can work in Mouse Control mode and Dome Camera Control mode. Refer to the picture on the right for a sample of joystick. The requirement of the joystick is as the following:

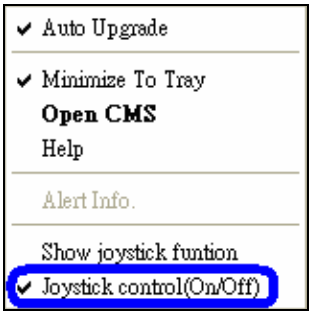


1. 12 buttons
2. X, Y, and Z axis

Press button "8" to change between mouse or dome camera control modes. However, if the selected camera is not a dome camera, the joystick can only be in Mouse Control mode.

NOTE: Only the first launched CMS server can use joystick control function.

When CMS detected an available joystick, CMS icon in the system tray icon will change to a joystick icon. In addition, a message will be shown to display current control mode: mouse control or dome camera control. Right click on the joystick icon and a menu will be shown as on the right. Select <Joystick control (On/Off)> to switch on/off joystick control.



Select <Show joystick function> will display a hint screen showing functions of the keys according to the control mode, either mouse control or dome camera control.

Whenever the joystick control mode changes, a message will be shown at the system tray to inform the user. Refer to the following tables for controlling options:

Under Mouse Control Mode:

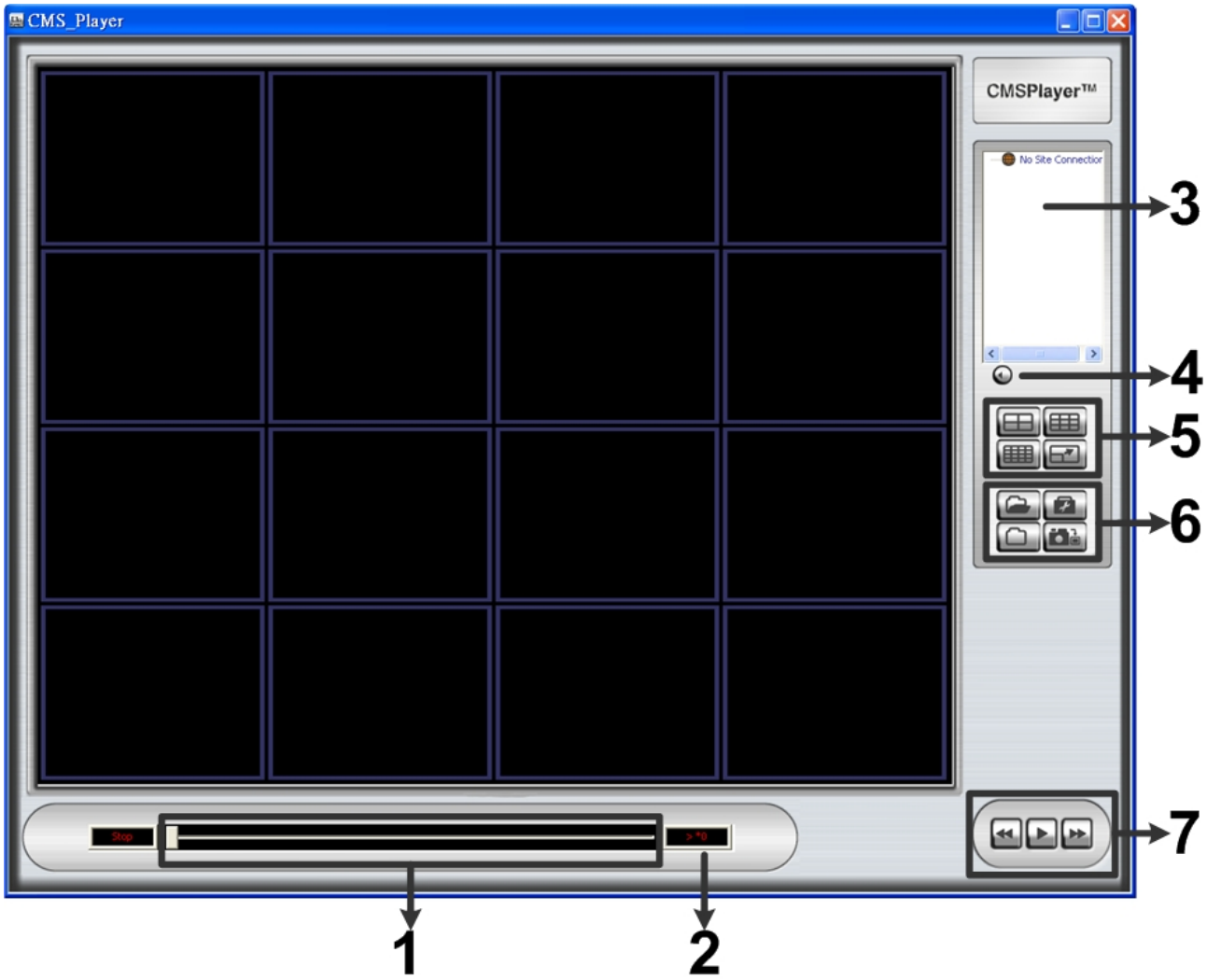
X axis	Left / Right movement
Y axis	Up / Down movement
Z axis	Clockwise to speed up; Counterclockwise to slow down movement
8	Change to Dome Camera Control mode
11	Left clicking key
12	Right clicking key

Under Dome Camera Control Mode:

X axis	Move dome / OSD menu selecting left or right
Y axis	Move dome / OSD menu selecting up or down
Z axis	Clockwise to zoom in; Counterclockwise to zoom out
1	Slow down movement
2	Speed up movement
3	Focus Far
4	Focus Near
5	Iris Close
6	Iris Open
7	Auto / Manual Focus
8	Change to Dome Camera Control mode
9	Enter OSD Menu (IP Dome)
10	Function as ENTER key in OSD Menu (IP Dome)
11-12	No function

Appendix A: CMS Player

CMS Player is a compact version of the standard DVR Player. When multiple CMS instances are opened in multiple monitors, each CMS can launch 1 CMS Player. The main window of CMS Player is shown below with the name of the buttons.



1	Slider Bar
2	Playback Speed Indicator
3	Site Tree
4	Audio
5	Display Modes: 2X2, 3X3, 4X4, and FULL SCREEN
6	Open Video File, Frame View Setting, File Path Setting, and Snapshot
7	Playback Controls: Fast/Step Backward, Play/Pause, and Fast/Step Forward

The usage and function of each button will be described in the following paragraphs.

Slider Bar

Click and drag the bar to search through the video.

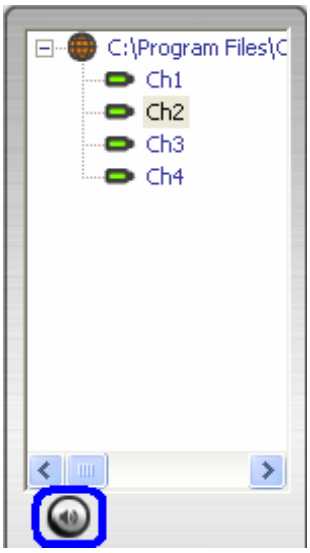
Playback Speed Indicator

The Speed Indicator shows playback speed in forward or backward direction.

- > indicates forward playback while < indicates backward playback.
- The playback speed can be *1, *2, *4, *8, *16, or *32.

Site Tree

The site tree shows the channels of the opened DRV file. Double click on a channel to view the selected channel in one screen. Right click on the site tree can choose to expand or collapse site tree.



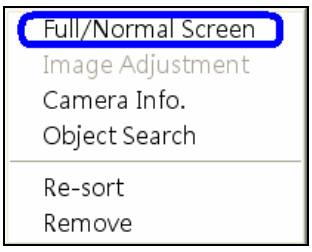
Audio

Click on the <Audio> icon located underneath the site tree to enable or disable the audio of the opened DRV file.

Display Modes

Click on the <2X2>, <3X3>, or <4X4> icons to view the camera images in multiple window mode. Click on the <FULL SCREEN> icon will enlarge CMS Player window to fit full screen.

The other way to change CMS Player window to normal or full screen mode is by right clicking on any grid with video and selecting the option <Full/Normal Screen>. Note that by pressing <Esc> key on the keyboard, CMS Player window can also return to normal screen mode from full screen mode.



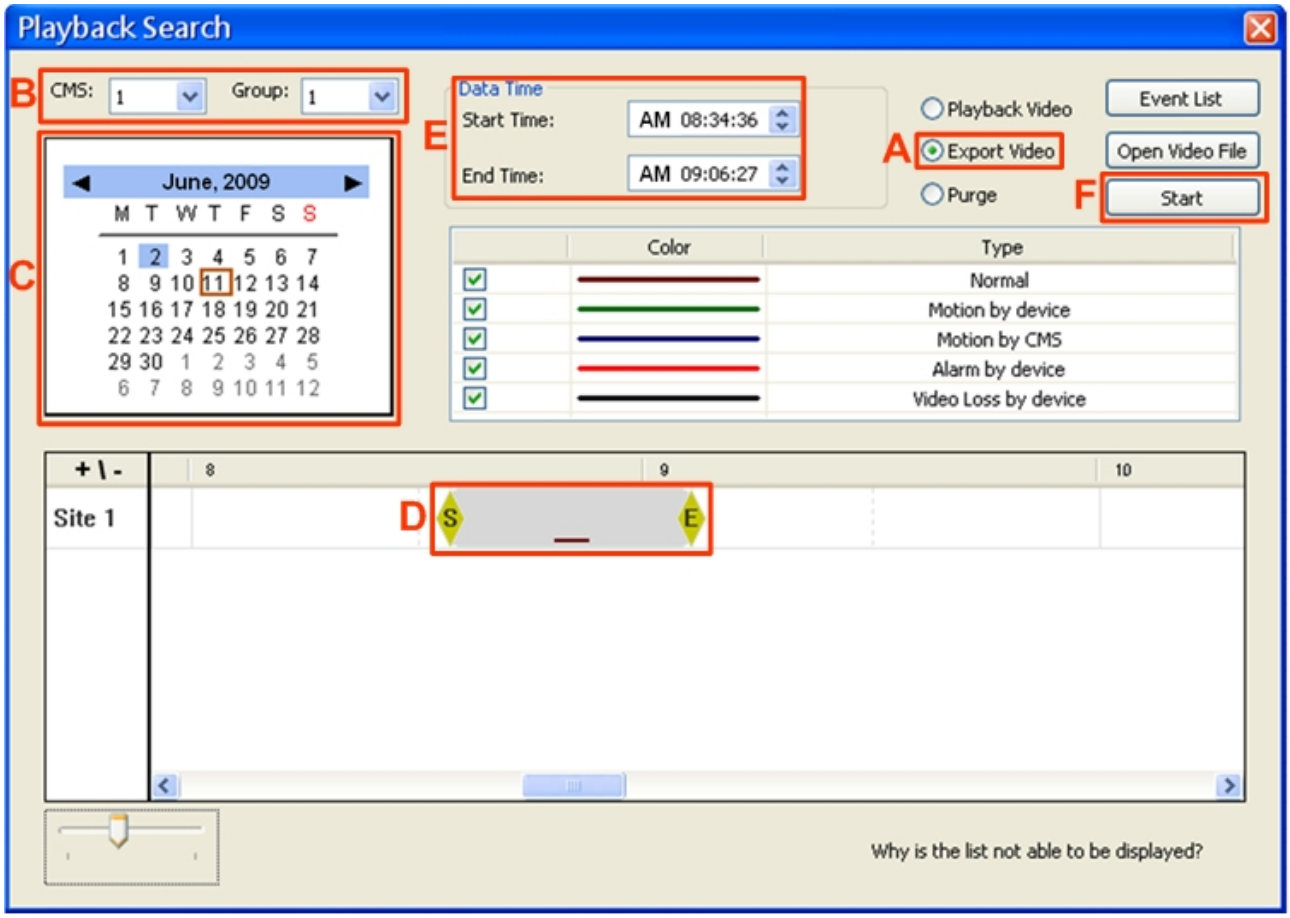
NOTE: Image Adjustment and Camera Info. are described in the previous sections. Object Search will be introduced later on.

Open Video File

Click on the <Open Video File> icon to display the "Playback Search" window. Users are allowed to playback, export, or delete videos. The instruction of video playback is illustrated in section ***Playback Recorded Video***. The followings will be details of video exportation and deletion.

Export Video:

Refer to below for steps of video exportation.



Step A. Select <Export Video>.

Step B. Select CMS server and group number.

Step C. Select date of designated videos.

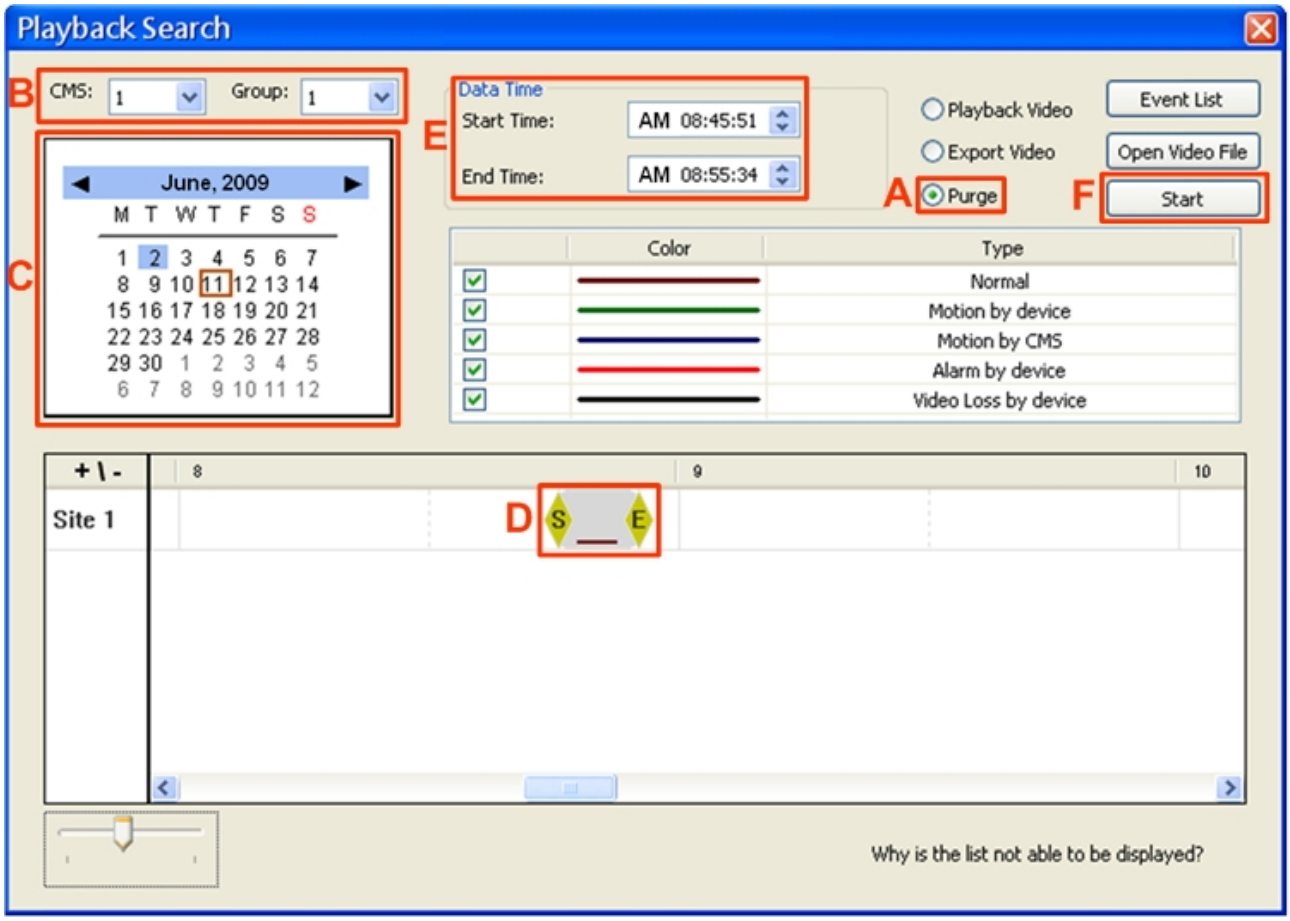
Step D. Click and drag the cursor to select designated videos.

Step E. The start and end time of the selected video will be displayed here.

Step F. Click on the <Start> button. A window will pop up to allow users to enter a filename and select video type (AVI or DRV). Then click on <Save> to start the exportation.

Delete Video:

If the current CMS login account is in the admin group, video deletion function will be available. Refer to the following for step by step instruction.



Step A. Select <Purge>.

Step B. Select CMS server and group number.

Step C. Select date of designated videos.

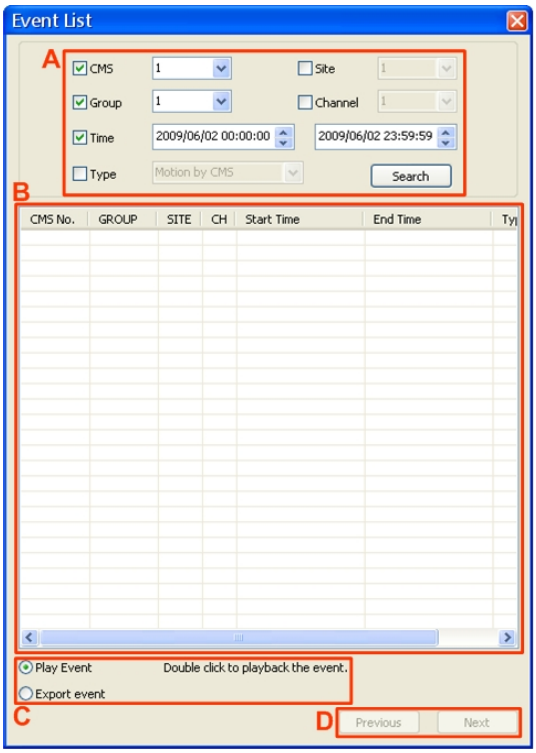
Step D. Click and drag the cursor to select designated videos.

Step E. The start and end time of the selected video will be displayed here.

Step F. Click on the <Start> button and a confirmation dialog will be displayed. Enter correct username and password to start the deletion.

Event List:

In addition, users can also playback and export event videos via searching through the event list. Click on the <Event List> button on the upper right hand corner of the "Playback Search" window. The "Event List" window will be displayed as on the right. Refer to below for the instruction.

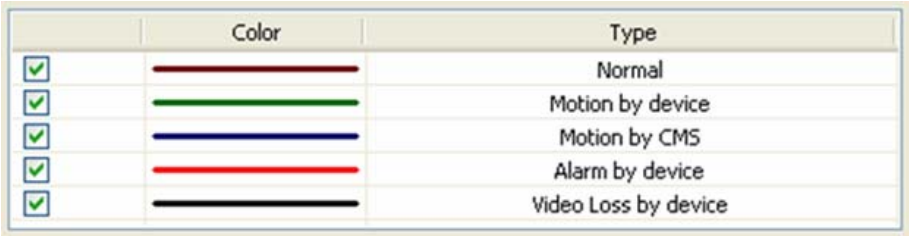


First set searching criteria in Box A and click on the <Search> button. The event videos satisfied the searching criteria will be listed in Box B. If the list contains more than 1000 event videos, click on the <Previous> and <Next> buttons in Box D to see more selections.

In Box C, users can choose to playback or export event videos. Select <Play Event> and double click on any item in Box B to playback the event video. Alternatively, select <Export event> and a <Start> button will appear at the bottom. Press Ctrl key to select multiple files and click on the <Start> button to begin exporting the event video(s).

Video Type Display:

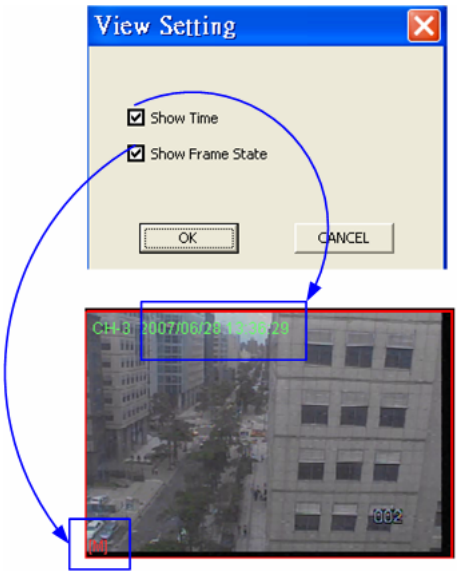
The chart in the middle of the "Playback Search" window allows users to assign unique color displays to represent different types of video data. Double click on any cell under the "Color" column and choose a preferred color to represent the corresponding video type.



Frame View Setting

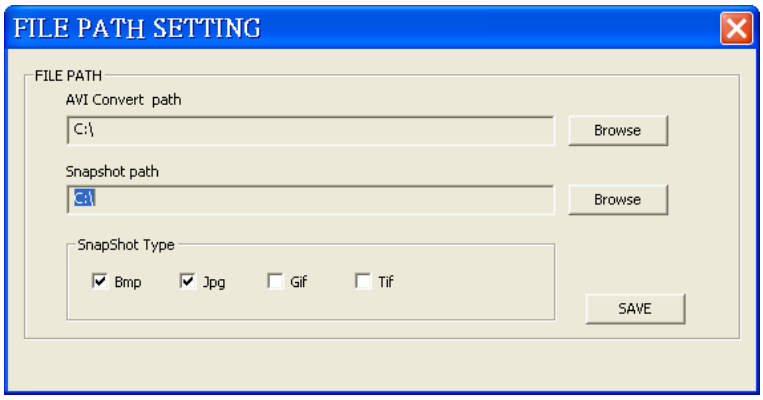
The user can choose to show/hide the time and alert text on the video.

Click on the <Frame View Setting> icon, and the View Setting window will be displayed. Check <ShowTime>, and the time will be shown on the screen. Check <Show Frame State>, and the alert text such as motion, or video loss will be shown. Uncheck to hide the information.



File Path Setting

Click on the <File Path Setting> icon to preset file paths for AVI conversion files and snapshot files. Click on <Browse> to select desired folders. In addition, file type of snapshot pictures can also be selected: Bmp, Jpg, Gif, or Tif formats. After the settings are selected, click on <Save> to save.



Snapshot

Click on the <Snapshot> icon to capture a snapshot of the screen. When the snapshot window is opened, users can choose to rename the filename or leave it as it is. Click on <OK> to save the snapshot or <CANCEL> to discard it.

Playback Controls

Play/Pause:

Click on to start playing back the video. The icon will change to showing that the video is now playing. Click on to pause playing back the video.

Fast/Step Backward:

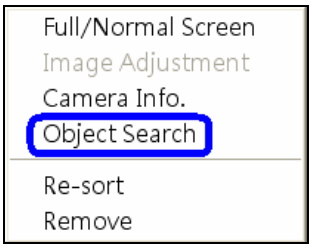
Click on to play the video fast backward. When the playback of the video is paused, click on this icon to move one step backward.

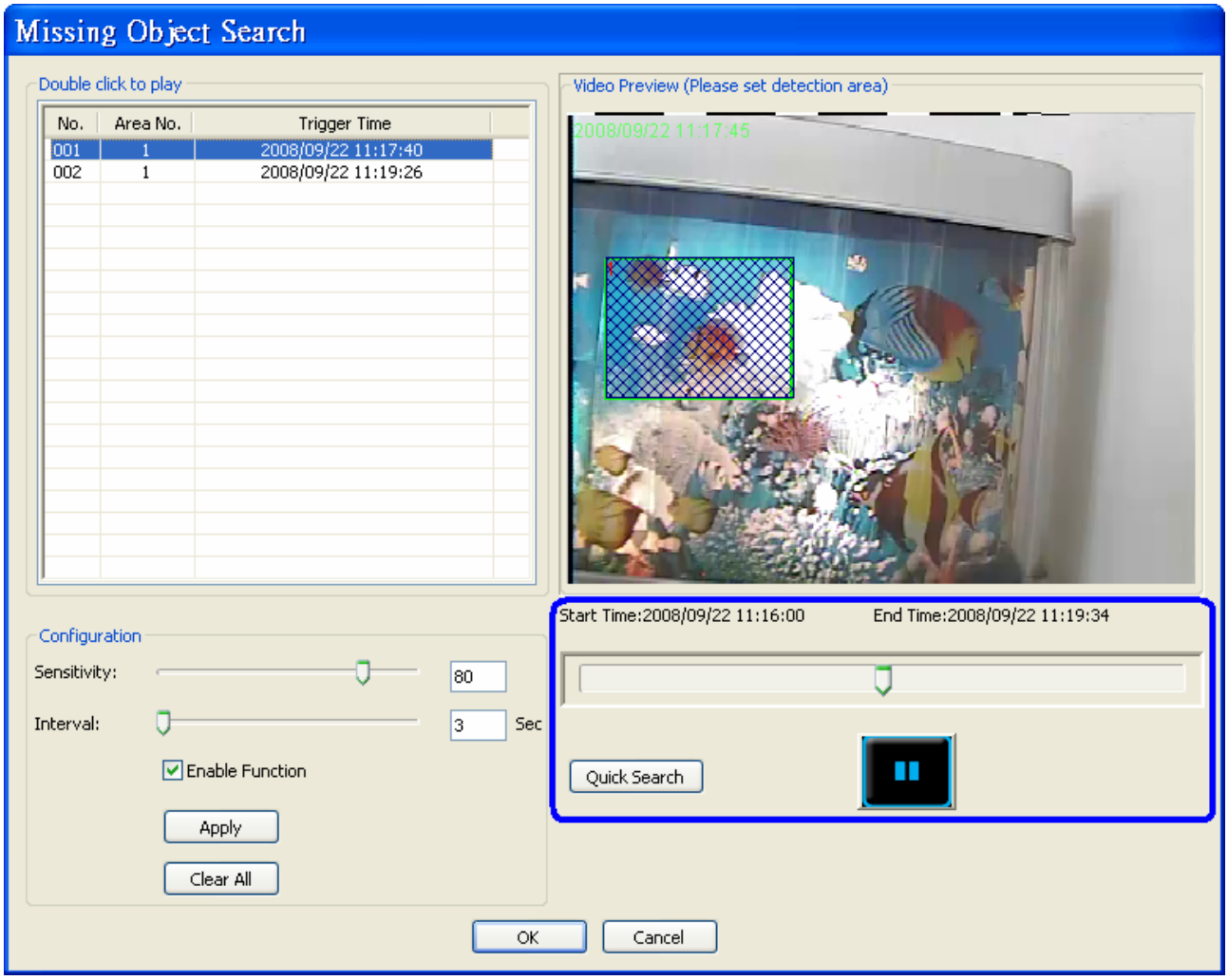
Fast/Step Forward:

Click on to play the video fast forward. When the playback of the video is paused, click on this icon to move one step forward.

Object Search

Right clicking on any grid with video and select the option <Object Search>. The basic configuration of object search function in CMS Player is the same as what is in CMS. Please refer to section ***Object Search*** for more details. This section will introduce the different part of the object search function in CMS Player.





Quick Search: Click on it to quick skim through the video for object search of the selected area(s). The list will be filled when lost of object alert(s) found.

Playback Control: When users double click on the list to start the playback, a pause button will appear next to the <Quick Search> button. After users clicked the pause button, the playback control buttons will be shown as below that allow users to step forward/backward the video.

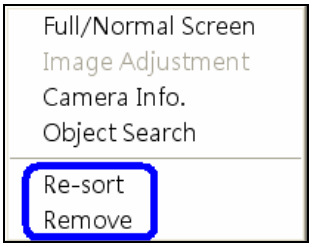
Assign a Channel to Certain Grid

Similar to CMS, CMS Player also allows users to assign any channel in the site tree to any grid of CMS Player main window. Follow steps below to complete assignment.

Step 1: Click and hold the channel users want.
Step 2: Drag and drop it onto the window that users want to assign in.

Resort/Remove Displaying Grid

Right click on any channel and select <Re-sort> to restore the original layout.



In addition, users can also remove any channel by right clicking on the grid and select <Remove>. Alternatively, users can select any grid and press <Delete> key on the keyboard to remove the channel.

NOTE: Selecting <Re-sort> will restore the removed channels, or users can add the channels back to any grid via drag and drop.

Image Adjustment

Image adjustment function in CMS Player is the same as in CMS. Please refer to section ***Adjust the Image*** for more details.

Camera Info.

Camera Info. function in CMS Player is the same as in CMS. Please refer to section ***Camera Setting / Camera Info.*** for more details.

Appendix B: Troubleshooting

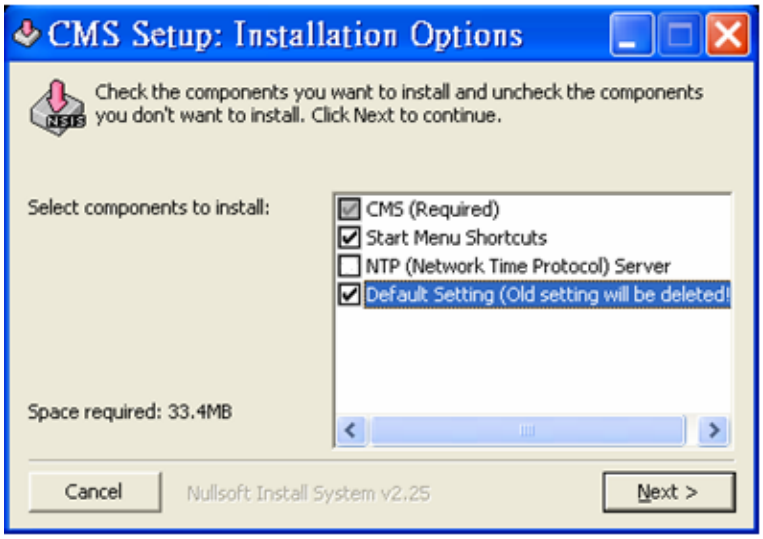
The followings are some common situations when the user is having difficulty with CMS server.

1. CMS server does not work properly. How can it be recovered or where can I ask for help?

   Please try the following ways to recover it first.

   A. Please check if the computer meets the system requirement.

   B. If CMS automatically closes when it's opened or when it's connecting to sites, please send the files stored in \CMS\Setting\ under improper operation condition. Afterwards, re-install CMS and check to install **Default Setting** during installation. Remember not to import old setting files. This will tell whether if the old setting data are corrupted.

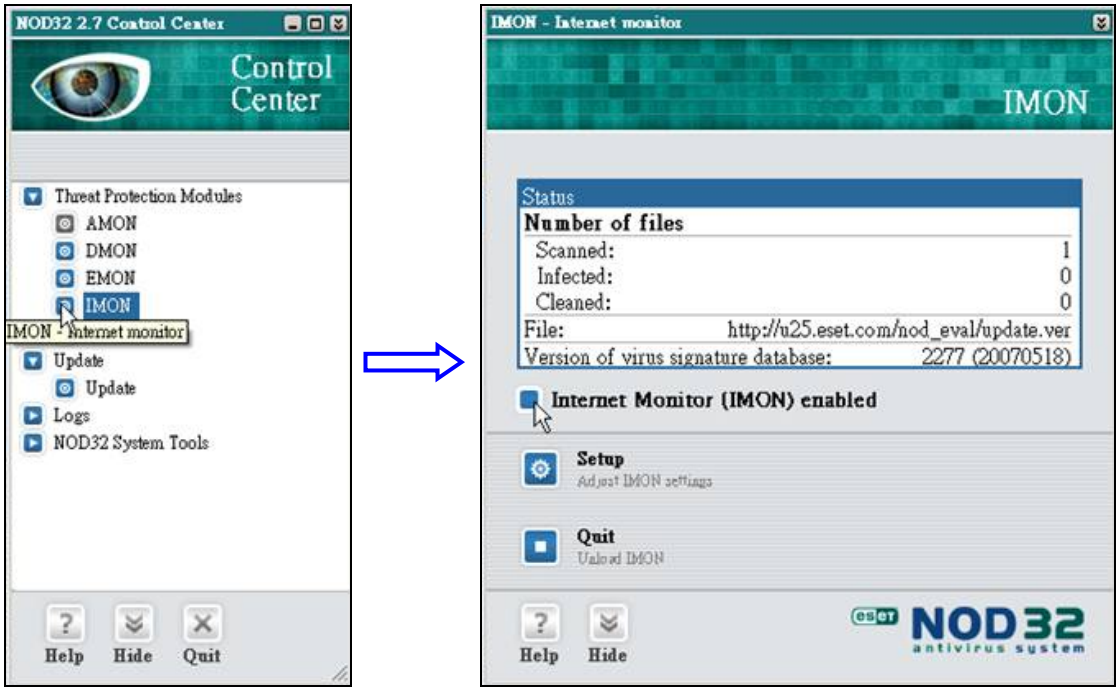


   C. If CMS cannot successfully connect to sites, check the followings.

   - Confirm IP, port, username, and password of the site. Users can connect to the site via IE browser to verify the site exists and is connectable.
   - Close firewall and virus scan software and try to connect again. If the problem is due to firewall or virus scan software, please change their settings.
   - If the connection still failed, please send the IP address to our engineer.

NOTE: When users need to ask for the engineer's help, please send a copy of the files stored in \CMS\Log\ as well.

2. CMS server takes up too many HDD space.

We have found that the preset of the virus scan software "NOD32" will automatically create a temporary file under windows system temporary folder when CMS connects to sites. This temporary file will automatically increase the size which causes the HDD became lack of space.

Please go to the control center of the NOD32 and disable **IMON**. Then the problem should be resolved. The following pictures are examples.