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## CMS Overview



- ❁ CMS is a program to offer real time A/V monitoring with multiple connections to video servers and IP cameras. It also offers various Recording functions plus Search and Playback.
- ❁ The program consists of two different programs: CMS and True Search. These programs run independently and offer realtime monitoring and playback respectively.
- ❁ The CMS offers not only Video/Audio monitoring but also Recording, Playback, Event monitoring, Alarm & PTZ Control and Remote set-up function-like features which DVRs offer.

## INSTALLATION

- ❁ Executing the CMS set-up program, the Icon of CMS will be created on desktop.

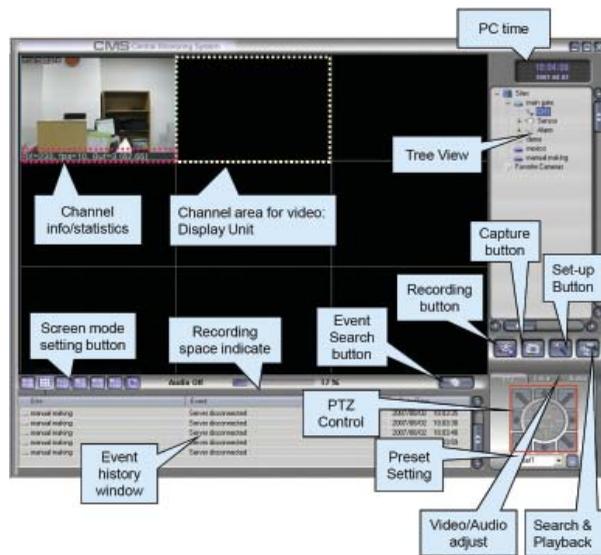


- ❁ CMS is executed by double clicking the icon.

### PC Required specification

OS : Windows XP, Windows 2000  
CPU : 2GHz or higher  
Memory : 512MB or higher  
VGA : 32MB RAM or higher  
Hard Disk Capacity : 20MB or higher

## Main Screen Configuration



## Registration & Connection of Server

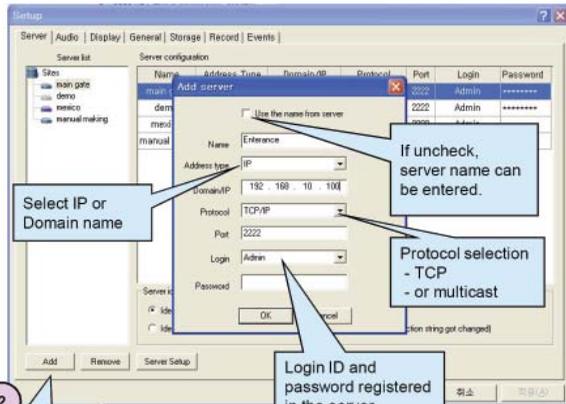


### 1. Registration of server

Server : Video Transmitter such as Video Server, IP Camera... which is connected to CMS.

1

Click **SETUP** button



2

Click **Add** button

## Registration & Connection of Server



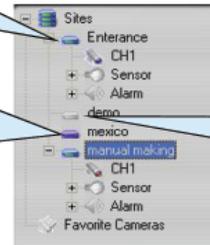
### 2. Managing server connection using Tree View

Servers registered at Server tab of Setup dialog are shown on Tree View. A server's connection state is distinguishable by colour of the tree node.

**BLUE** : Connected state

**PURPLE** : "Trying connection" state: disconnected state due to server failure or network problem

**GREY** : Disconnected by user



In case of no input signal of camera, it will be Red colour (video loss)

Once clicking right button on PC mouse at Tree node, there shows Connect or Disconnect menu. Using this, it is possible to connect or disconnect to Server individually.

## 1. Screen mode and channel mapping

### 1) Mapping channels and video windows

#### Mapping between Server channel and Display Window

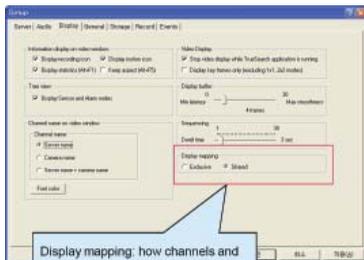
There are two ways to make a mapping between server channel and display window.

#### 1. Exclusive mapping

- Channels of currently selected server are displayed on video windows in orders. Channels of other servers are not displayed.

#### 2. Share mapping

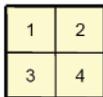
- All channels of all servers are displayed in the order in the Tree View.



Display mapping: how channels and windows units are mapped

#### Numbering of Display Windows

The order numbers of display windows are numbered left-to-right, top-to-bottom starting from the upper-left corner window.



2x2 mode



1+5 mode

## 2) Using various screen modes

#### Configuring screen mode

Screen mode can be selected by pressing one of buttons for screen mode configuration. Using Sequence button, it is possible to display channels sequentially in a specified interval.



Sequence button (Auto-rotation function)

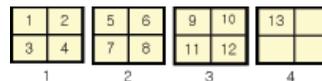
#### Screen mode buttons

- 2x2, 3x3, 4x4, 1+5, 2+8, 1+12, 6x6

#### Page transition

If the number of channels are larger than the number of video windows in current screen mode, they are mapped to more than one pages of display windows.

For instance, if the number of total channels is 13 and current display mode is 2x2.



Indicate current Page No.

Press this icon to transit to the next page

### 3) Active channel

#### Active channel

Currently selected channel is called as 'Active channel'. Active channel is the channel affected by the following operation:

- PTZ control
- Audio Tx/Rx

#### Identification of active channel

Border line of the active channel is sky-blue coloured.

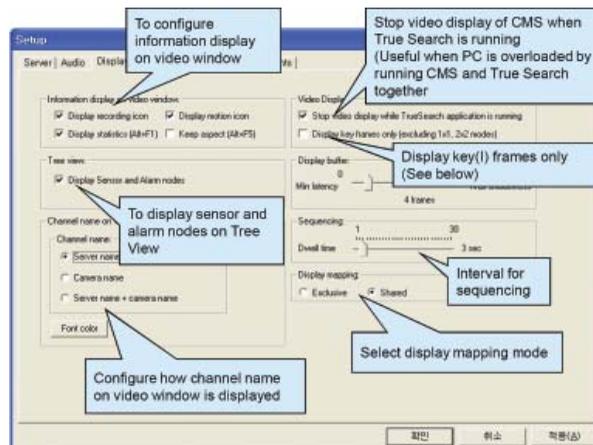
#### Selecting the active channel (one of the two method)

- Click mouse on Display Window
- or
- Select the camera in the Tree View.



Active channel (Sky-blue colour border)

### 4) Display setting



#### Key frame only display mode

This mode is provided to reduce CPU load when large number of servers are connected and screen configuration mode displays more than 4 channels at the same time.

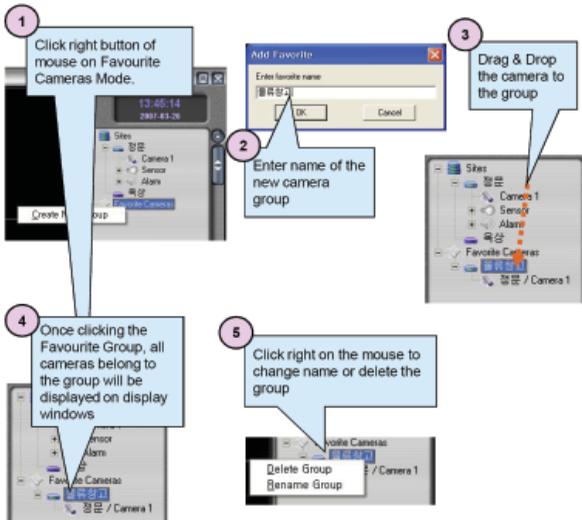
Full frames are displayed in the following cases even when this mode is enabled:

- (1) 1x1 mode, 2x2 mode: because only 4 channels are displayed
- (2) Currently selected (highlighted) channel in any screen mode: to provide interactivity in PTZ control

## 5) Managing favourite group

### Favourite Camera Group

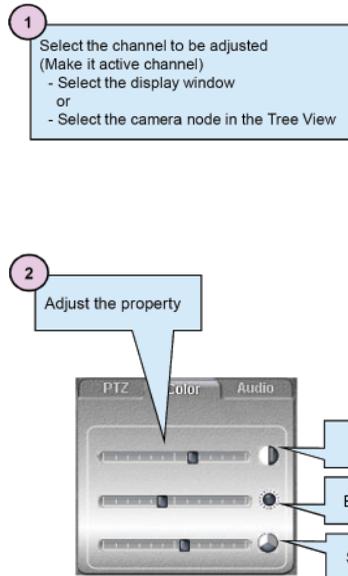
Cameras from different servers can be selected to form a 'Favourite Camera Group', which is convenient for monitoring groups of cameras of special interest.



## 2. Adjusting video input

### Adjustable properties of video input

- Brightness, contrast, saturation



3. Audio setup and control

**Audio communication modes**

*CMS -> Server : 1:1 or 1:N (broadcast) mode selectable*

*Server -> CMS : (In case of selecting Receive) CMS receives audio data from all servers which enabled audio TX. Only audio from active channel is output to PC speaker.*

Setup

Server Audio Display **Audio receive or not**

Receive

Receive audio

Send mode

To selected only

To all (Broadcast)

**Send mode: Unicast or broadcast**

PTZ Color Audio

Talk on **Audio send On/Off**

PC

Adjust PC's mic and speaker volume

4. PTZ control & preset

**PTZ Control**

- Support PTZ control for PTZ receivers by major vendors such as Pelco, Samsung
- We welcome the requirements from customer to add additional PTZ protocols

1

Select the Active channel (Refer 5-1-3)

- Select display window
- or
- Select the camera node in the Tree View

2

PTZ Control

PTZ Color Audio

Zoom

Focus

Window

Select preset

## 5. Event and alarm

### 1) Event monitoring

#### Types of events

Server event (Events from video server or IP camera)

- 1) No camera (video loss) 2) Sensor 3) Motion

#### Local (CMS) event

- Local events are generated by CMS

- 1) Server added/deleted      2) Server connected/disconnected  
 3) CMS started/terminated    4) Connection failed  
 5) Audio talk on/off

Events are displayed as soon as they are generated

Site	Event	Date/Time
Local event	CMS started	2007-03-26 13:44:27
...	Server connected	2007-03-26 13:44:27
...	Server disconnected	2007-03-26 13:44:33
...	Server deleted	2007-03-26 13:44:33
...	Server added	2007-03-26 13:44:45
...	Sensor 1 on	2007-03-26 15:14:02

Site: server which triggered the event

Event type

Event time

Sensor note in the Tree view reflects the state of the sensor



## 2) Event Search

Event Search window is invoked by pressing Event Search button  
 Event Search window consists of two sections: Server event and Local (CMS) event. They can be searched in the same way.

1) Enter Server ID (if blank, all servers will be searched).

2) Set the duration to be searched

3) Select event types

4) Press to search

5) Search results comes...

Site	Event	Date/Time
202	Alarm 1 off	2007-02-07 12:00:00
202	Alarm 1 on	2007-02-07 12:00:00
202	Alarm 1 off	2007-02-07 12:00:00
202	Camera Camera 1 off	2007-02-21 19:16:20
test	Camera Camera 1 off	2007-02-21 19:23:30
202	Camera Camera 1 off	2007-03-06 11:36:21
202	Camera Camera 1 on	2007-03-06 11:36:36
202	Camera Camera 1 off	2007-03-06 11:40:11
202	Camera Camera 1 on	2007-03-06 11:40:14
정문	Sensor 1 on	2007-03-26 15:14:02

## Live Monitoring



### 3) Alarm(relay) control

The server's alarm port can be controlled remotely from CMS. An alarm node in the Tree View comes grey when the alarm is off, and comes red when the alarm is on.

Click the right mouse button at an alarm node to invoke the menu for changing alarm state



When the alarm on, colour of the node turns red



### 6. Still image capture

Press Capture button  to capture a still image. The size of captured image will be same as the input resolution of the server. Captured image is saved as a BMP file.

## Recording



### 1. Overview

#### Features of recording

Video, audio and event data can be recorded into disks with the following features.

- Simultaneous recording of max 36 video channels and max 36 audio channels
- Support of long pre-event and post-event recording time
- Time-lapse recording and event-based recording with various combination of events
- Disk recycling on disk full
- Disk add/drop without affecting existing data recorded

#### Procedure

- 1) Configure storage (Storage tab)
- 2) Configure recording mode and schedule for each channel (Record tab)
- 3) Start recording with Record button 

## 2. Storage setup

The first step is to allocate storage files on disks. When there are multiple disks, storage file can be allocated in each disk. In such case, they are used in the order of disk order.

1 Select disk on which storage file is allocated (Press the row to make it active)

2 Press Allocate storage on the disk button → Allocate Storage file dialog comes

3 Enter amount to allocate and press OK

4 Select disk(s) to use for recording ('check')

5 Select 'Overwrite' for recycling mode

Drive	Total(GB)	Available(GB)	Allocation(GB)	Used(GB)
c:	29.91	24.74	0.00	0.00 (0%)
d:	30.27	29.02	3.00	1.72 (5%)
e:	30.27	30.26	10.00	10.00 (33%)
f:	50.59	50.52	45.00	0.44 (1%)

Allocate Storage File dialog fields:  
 Total size available: 50.52 GB  
 Recommended max size for allocation: 43.73 GB  
 Allocation for recording: 45.00 GB

## 3. Recording mode and schedule setup

Recording mode (time-lapse mode or combination of various event mode) and schedule can be set for each channel. For event-based recording, pre/post event recording duration can be set.

Record On/Off

Pre-event recording time

Post-event recording time

Select audio channel to be recorded together with this video channel

Use mouse to configure

Recording mode

One or more events can be combined

Different colours for combination of recording modes

No	Name	Re	PreEvent(sec)	PostEvent(sec)	Audio
1	Camera 1	On	30	100	

Recording Mode Legend:

- Time Lapse
- Sensor
- Motion
- Video Loss
- Sensor+Motion
- Natural+Video Loss
- Sensor+Video Loss
- Sensor+Motion+Video

## 4. Recording control(On/Off)

Record button is used as the master control of recording



Recording is ON



Recording is OFF

Notice: At least one disk(storage) file should be selected for the recording to proceed.

Drive	Total(GB)	Available(GB)	Allocation(GB)	Used(GB)
<input type="checkbox"/> C:	19.53	6.38	0.00	0.00 (0%)
<input checked="" type="checkbox"/> D:	95.01	25.46	3.00	0.05 (2%)

C: No storage file allocation on C drive  
D: Storage file is allocated, but not selected(checked)



This error comes when Record button is pressed without selecting disk to record

## 1. Overview

True Search program is for searching and playback of video, audio event data.

True Search can be executed in two ways:  
- Invoked independently from CMS  
- By pressing 'Start Search' icon in the CMS program

It offers simultaneous playback of up to 16 channels. One audio channel can be played together with video channels.

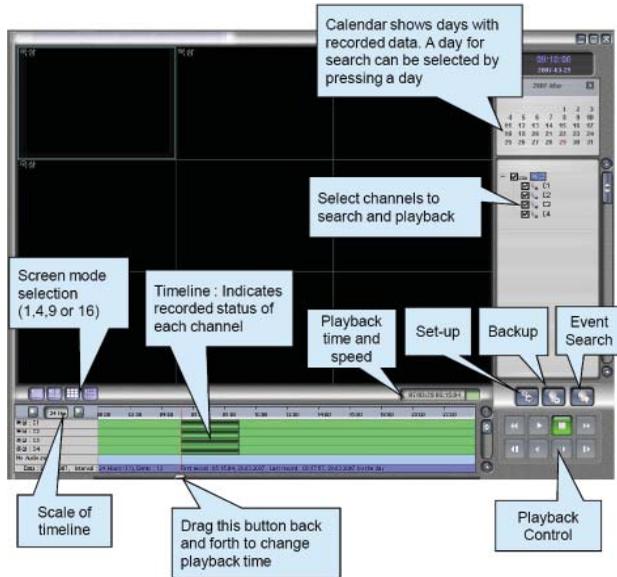
1 Press Start Search button

2 Takes little time before True Search invoked

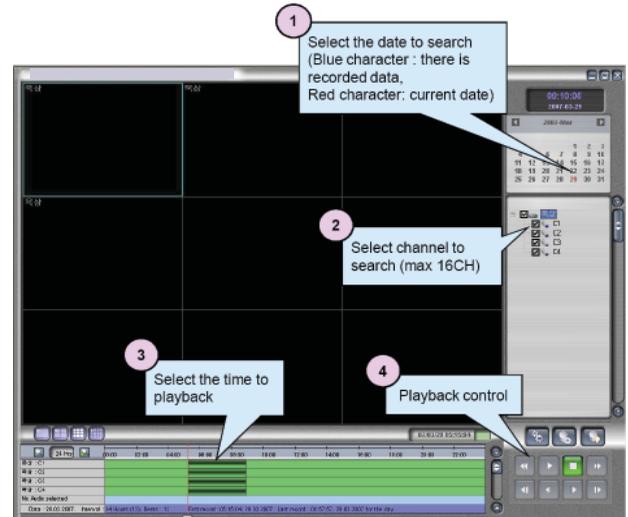
3 True Search is invoked

Starting True Search... Please Wait.

## 2. Search interface



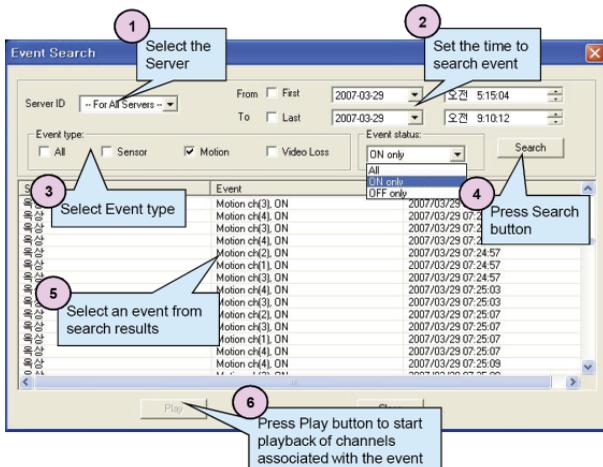
## 3. Search by date and time



## 4. Search by event

Once clicking Event Search button , the Event Search window is opened.

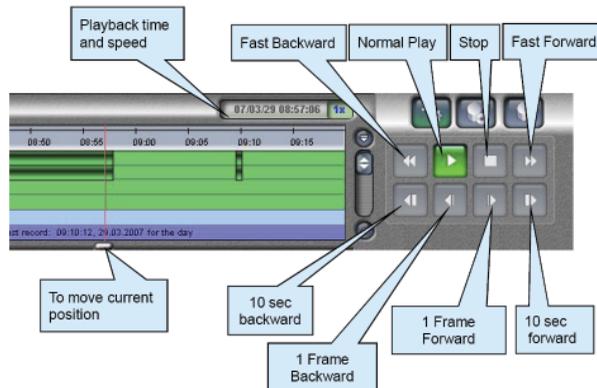
On the Event Search window, various conditions can be combine to find specific events. Then, video channels associated with a specific event can be searched and played.



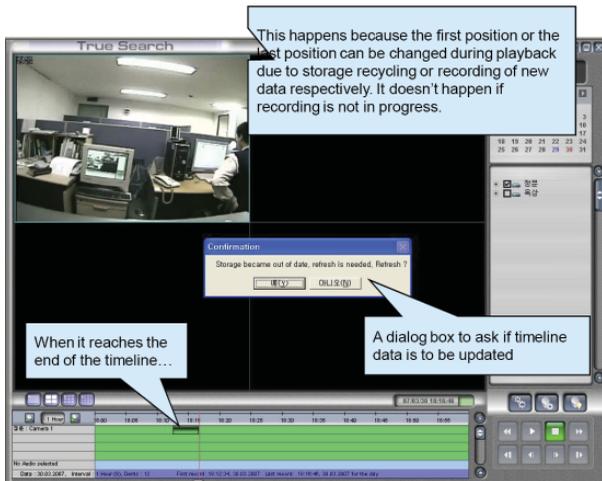
## 5. Playback control

While playback is going on, various playback control operations can be performed to find a scene more quickly. It is possible to add and delete channels during playback.

The Fast Forward and Fast Backward support 4, 9, 16 times speed and they show only key frames.



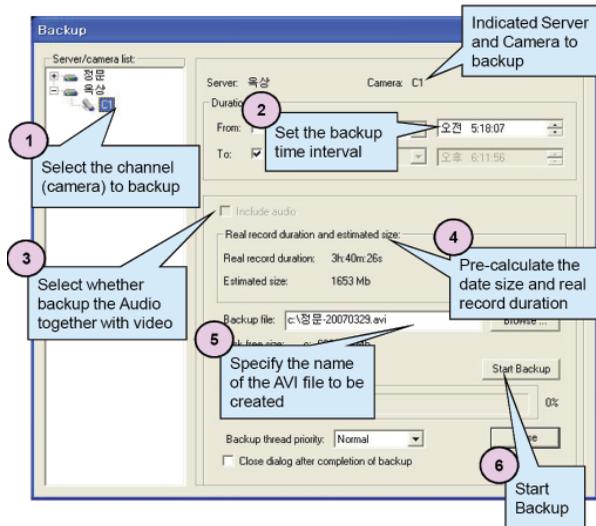
When the playback reaches the first position or the last position having data in backward or forward playback respectively, CMS may show a dialog box to ask if timeline data is to be updated.



## 6. Backup

Backup enables you to take backup of a recorded duration into AVI file.

Pressing Backup button , a dialog for AVI backup is invoked.



## 1. Overview

User authentication is performed on start up of CMS for security reason. Depending on the privilege group to which a user belongs, some operations are restricted.

Admin user pre-exists as the name 'admin'. Users of other groups can be created only by admin user

User authentication is asked on start up of CMS

Depending on the privilege of a user, some operations are restricted  
 - eg) Recording Start/Stop and Setup are not allowed to a user of 'user' group



## 2. User groups and privileges

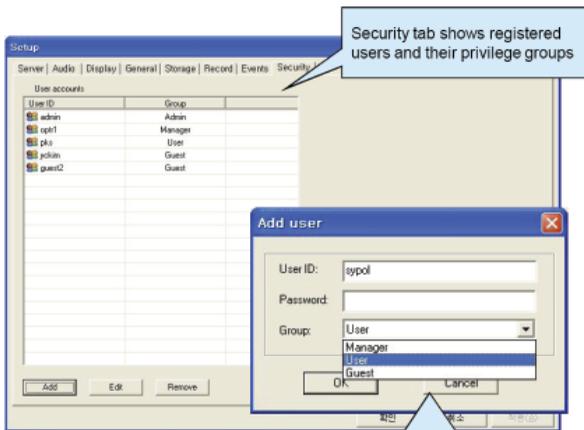
Operations which are not allowed to a user group are restricted in two ways:

- Buttons are disabled
- Pop-up menus don't appear on right button click of the mouse

Privilege \ Group	Admin	Manager	User	Guest
Viewing only	○	○	○	○
PTZ control Color control Audio control Server connection/disconnection Event search Still image capture True Search invoke	○	○	○	
Setup excluding user account mgnt. Record start/stop Favorite camera group mgnt. Change camera on video windows	○	○		
User account management	○			

## 3. User account management

Only admin can manage user accounts. In fact, 'Security' tab on Setup dialog is visible only to admin user.



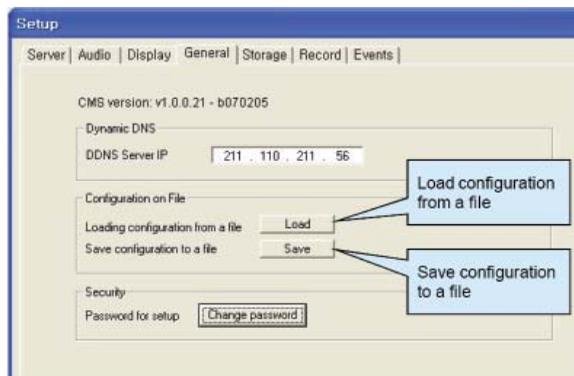
Security tab shows registered users and their privilege groups

The dialog for adding a user.

Admin user can change other user's password and/or group on the dialog invoked by pressing **Edit** button

## 1. Saving and loading configuration

CMS supports the function to export and import its configuration to/from a file. It is useful for taking backup of CMS configuration which is rather complicated due to many registered servers. It is also possible to apply a configuration taken from a PC to another PC to run CMS.



Load configuration from a file

Save configuration to a file

## 2. Setting DDNS server IP address

For video servers which use old scheme of DDNS service, it is necessary to set the IP address of the DDNS server. It is provided for compatibility with old models.

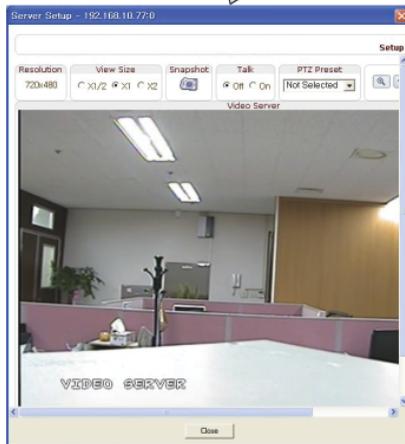
## Other Functions



### 3. Remote setup of server

*Pressing Server Setup button on Server tab of Setup dialog invokes Internet Explorer or specific dialog for remote setup of the selected server, depending on the model of IP camera.*

Internet Explorer invoked for remote setup of IP camera



## Other Functions



### 4. Statistics

*Pressing Alt-F1 enables the statistics of video and audio reception and decoding on each video window. It is disabled by pressing again (toggle).*

*This can be also configured at Display tab of Setup dialog.*



Receiving video bitrate = 317kbps,  
Video frame rate(fps) = 29  
Frames in video buffer = 2  
Audio TX = 0kbps, Audio receiving = 0kbps

