



User Manual For CMS (WEB version)





NOTICE

The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without any notice.

The purpose of this manual is to kindly aid the user for the MINI MDVR CMS installation and setup.

This CMS installation manual is for S28, X5, A5, F5, X11, X3 and MINI3 module MDVR.



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1 Preface

After you get the software, please try to setup the MDVR and the CMS to get video first according to *3G & WIFI setup for MDVR28 and CMS3.0*. If you don't have this document, please contact us.

This document introduces the basic application of the CMS. If you have a big project which has more than 100 vehicles, please contact the support team for the best solution.

This software includes 4 parts: message server, transmit server, media proxy server and client.

Message server is used for the register information of all the MDVR, online information, GPS information and deal with all kinds of commands.

Transmit server is used to transmit video, you must add and setup the MDVR information first in the transmit server.

Client is for the video display, information display and the reception of the command from the administrators.

1.1 System requirements

1. Operating System:

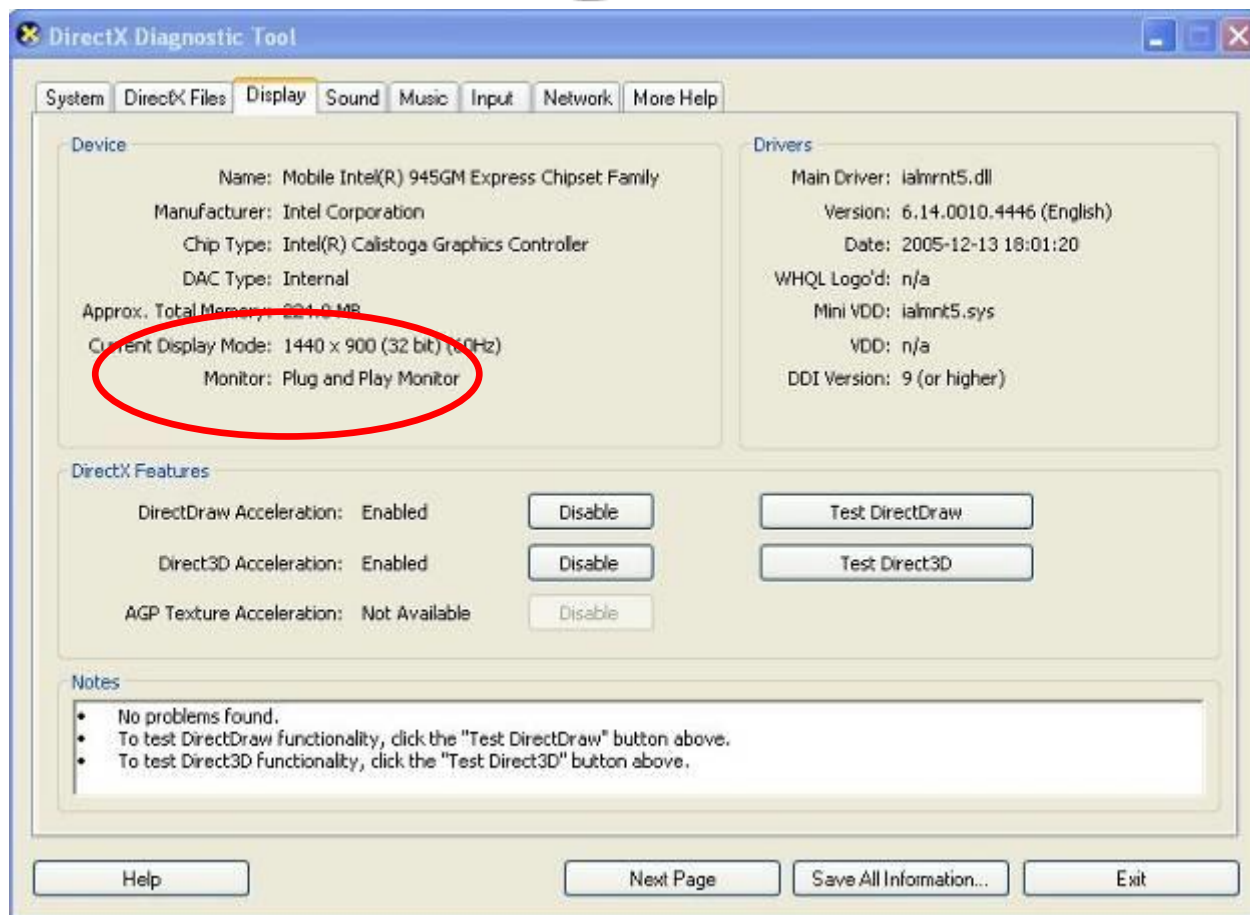
Server : windows 2003/2008 server

Client: XP/WIN7 32bit or 64 bit for client

2. The computer must have the drive of DirectX. Please check as follows: Start—Run--input “dxdiag”



Click on “OK”



The Direct Draw Acceleration and Direct3D Acceleration must be enabled.

3. Microsoft .Net Framework 3.5 SP1 or above version should be installed before the CMS installation
4. MySQL 5.1 data base will be installed automatically during the CMS installation
5. Please install OCX activeX according to the prompt when you apply video on IE for the first time.
6. IE version: Microsoft Internet Explorer 6.0、 Microsoft Internet Explorer 8.0

1.2 Main features

The standard version CMS no need to register, it can manage 100 vehicles on center server of transmit server. The transmit server can transmit 48 channels concurrently to 3 clients (each has 16 video window) at the same time.

The CMS is functional which integrate the video transmission, remotely PTZ control, alarm, GPS tracking, local recording on CMS, alarm recording, and also it can show you the operating and alarm information on the log window. Also, you can change the interface to different mode easily.

Message server is used for the MDVR register, GPS information and all the commands downloading. Transmit server is for the video transmission. Client, the user friendly interface, shows you all the information. Also, you can setup the MDVR remotely from the client.



Main features:

1. Wireless Video/Audio transmission
2. GPS tracking: show the real-time location of the vehicle on map window with MapInfo & Google map.
3. GPS playback
4. Report query
5. Support IE browser client.
6. Send Email to administrator/user automatically once alarm is triggered.
7. Remotely PTZ control: control the PTZ on CMS, including change direction, pre-set position, call position.
8. CMS local recording: record the video from the CMS video window.
9. Alarm report system: receive the alarm information, and deal with this alarm information according to the settings.
10. Vehicle management: manage vehicle on the transmit server, show all the vehicle information on the client vehicle window to check the online information and do some operations remotely to the MDVR.
11. Multi-clients supported: support many clients connect to the server to apply video.
12. Remotely configuration: setup the GPS upload interval, IO setup, stream setup for video transmission and so on.

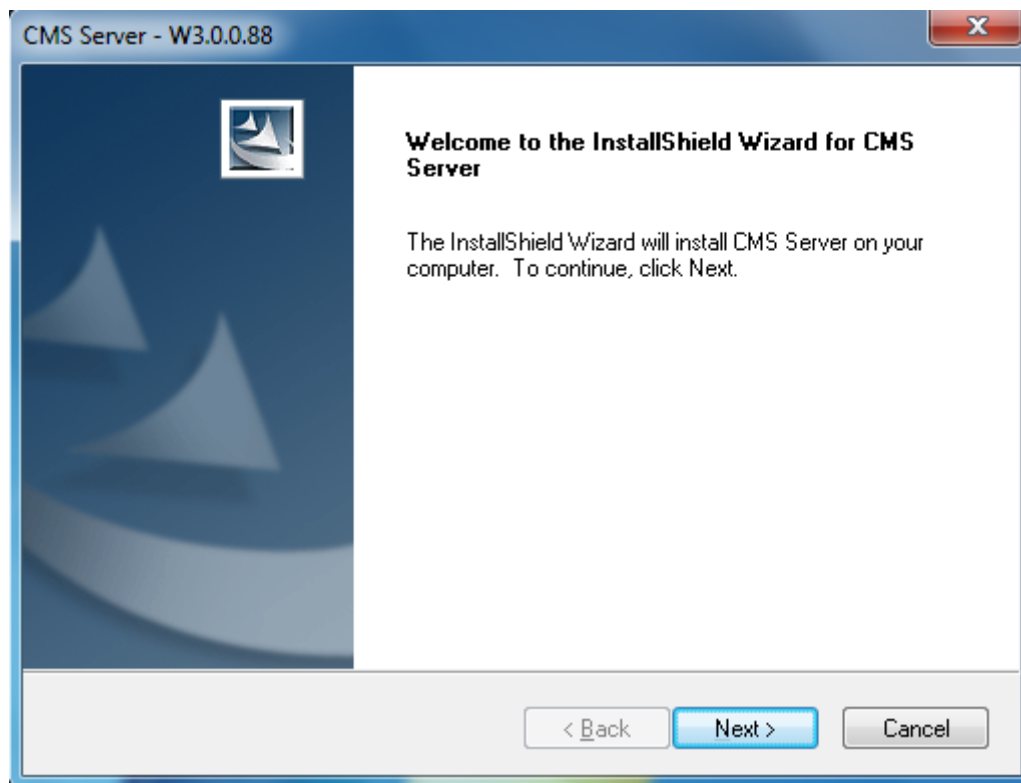
2 Server Installation

2.1 System requirement

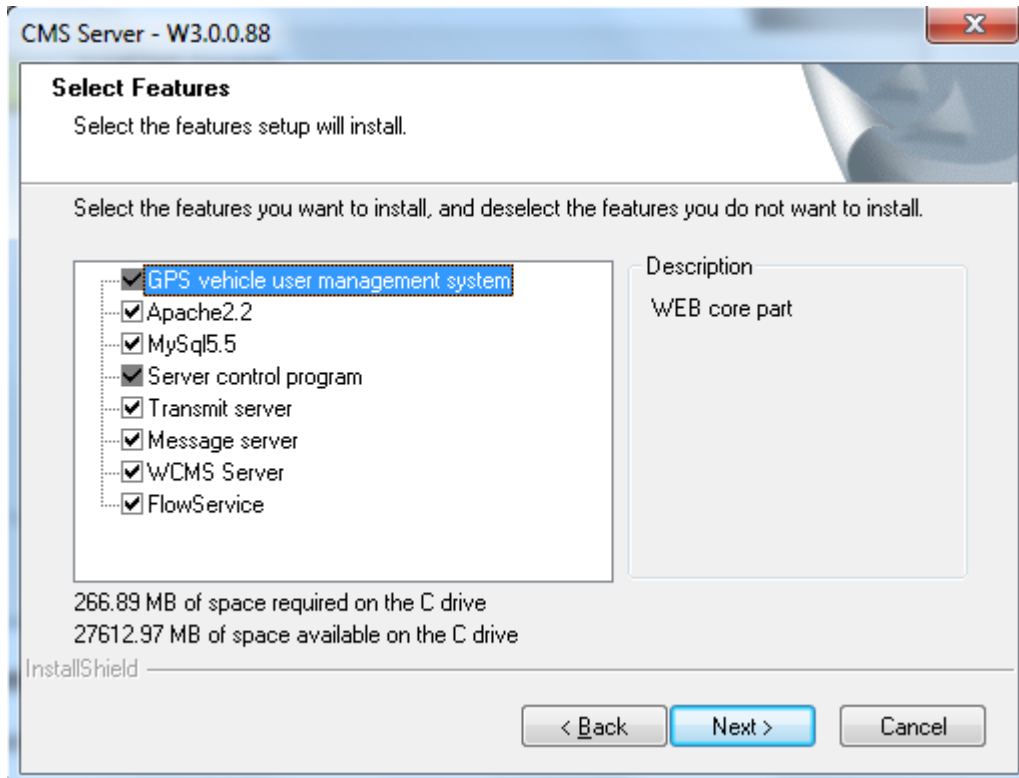
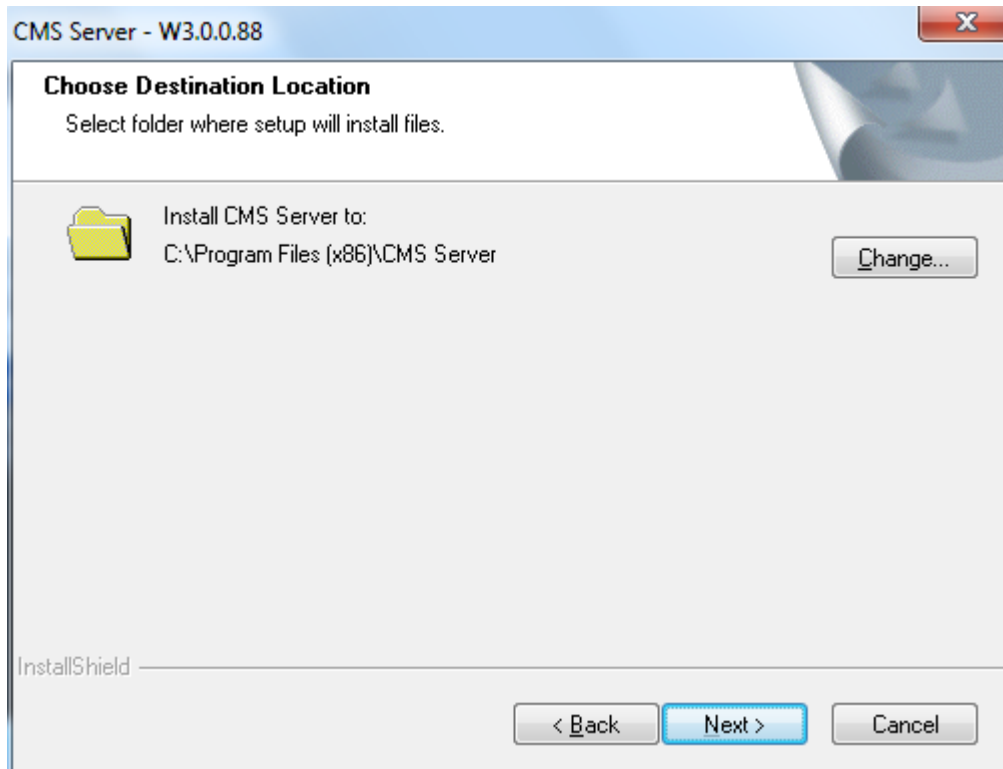
1. Server: 2003 server, 2008 server
Message and transmit server:
CPU: Quad- Core Xeon 5504*2
RAM: 8GB, ECC DDR3
HDD: 2*320GB SAS HDD, 15K RPM Hotplug
Ethernet card: 2* 1000Mbps
2. Client: XP/WIN 7 (32bit & 64 bit)
CPU: Dual Core Intel(R) Pentium(R) Processor E5400, 2.7GHZ
RAM: 2GB, DDR3
HDD: 320G SATA 7200RPM
Graphics card: NVIDIA GeForce G310
Ethernet card: Integrated 1000 M Ethernet

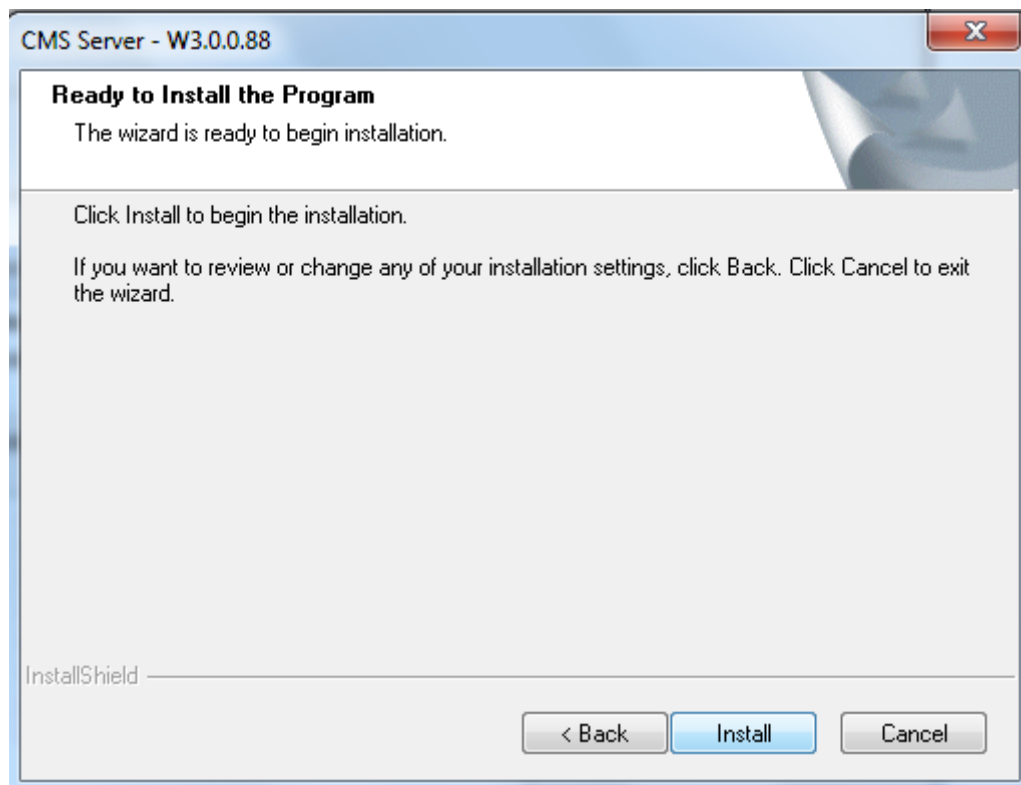
2.2 Installation

Please double click the exe file to install the server.



Click on Next to continue

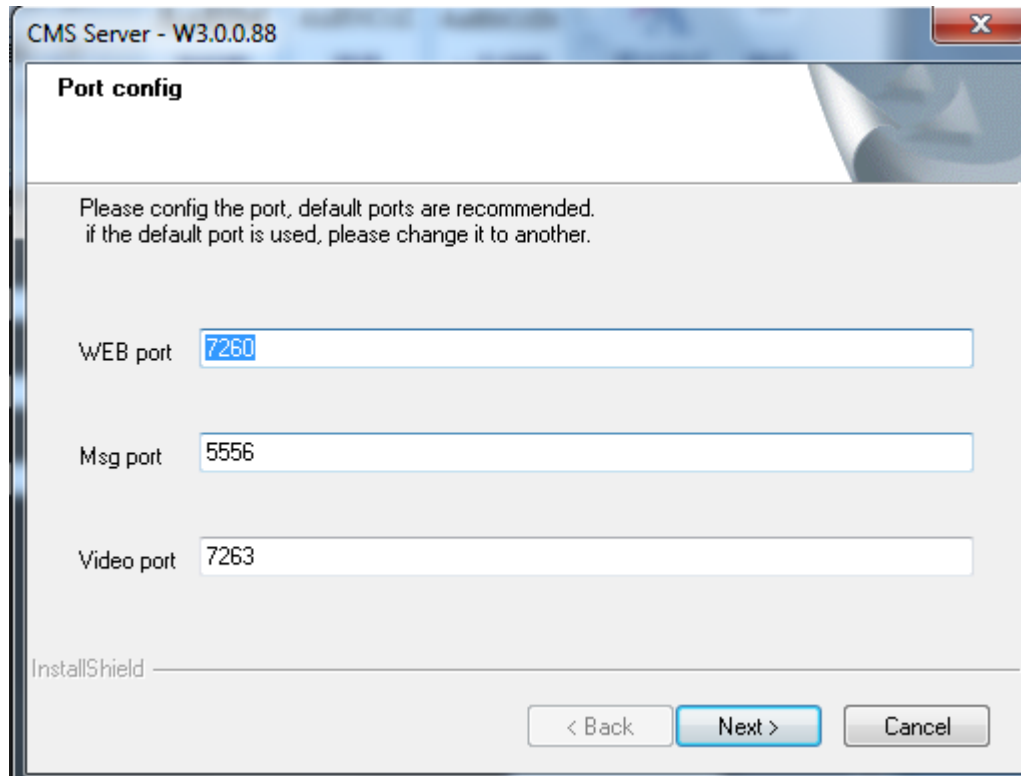




Click on Install to start the installation.

2.2.1 IP & Port configuration

After the installation is finished, you need to setup the port so that the WCMS can get register/alarm/GPS/video from the vehicle.

A screenshot of the "Port config" window in the CMS Server - W3.0.0.88 installer. The window has a title bar with the text "CMS Server - W3.0.0.88" and a close button. The main content area has a header "Port config" and a message: "Please config the port, default ports are recommended. if the default port is used, please change it to another." Below this, there are three input fields: "WEB port" with the value "7260", "Msg port" with the value "5556", and "Video port" with the value "7263". At the bottom, there is an "InstallShield" logo and three buttons: "< Back", "Next >", and "Cancel".

CMS Server - W3.0.0.88

Port config

Please config the port, default ports are recommended.
if the default port is used, please change it to another.

WEB port 7260

Msg port 5556

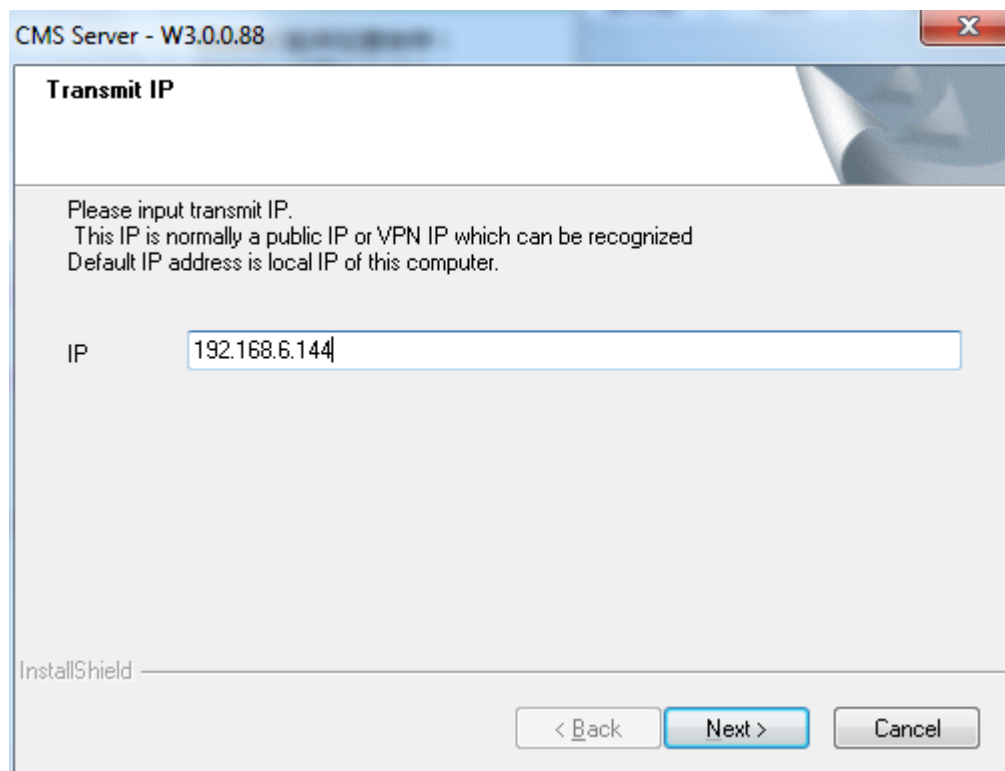
Video port 7263

InstallShield

< Back Next > Cancel

These ports are the default ports. For 3G transmission, please make sure you have opened these ports:

During the installation, it will read the local IP automatically,

A screenshot of the "Transmit IP" window in the CMS Server - W3.0.0.88 installer. The window has a title bar with the text "CMS Server - W3.0.0.88" and a close button. The main content area has a header "Transmit IP" and a message: "Please input transmit IP. This IP is normally a public IP or VPN IP which can be recognized. Default IP address is local IP of this computer." Below this, there is an input field labeled "IP" with the value "192.168.6.144". At the bottom, there is an "InstallShield" logo and three buttons: "< Back", "Next >", and "Cancel".

CMS Server - W3.0.0.88

Transmit IP

Please input transmit IP.
This IP is normally a public IP or VPN IP which can be recognized
Default IP address is local IP of this computer.


IP 192.168.6.144

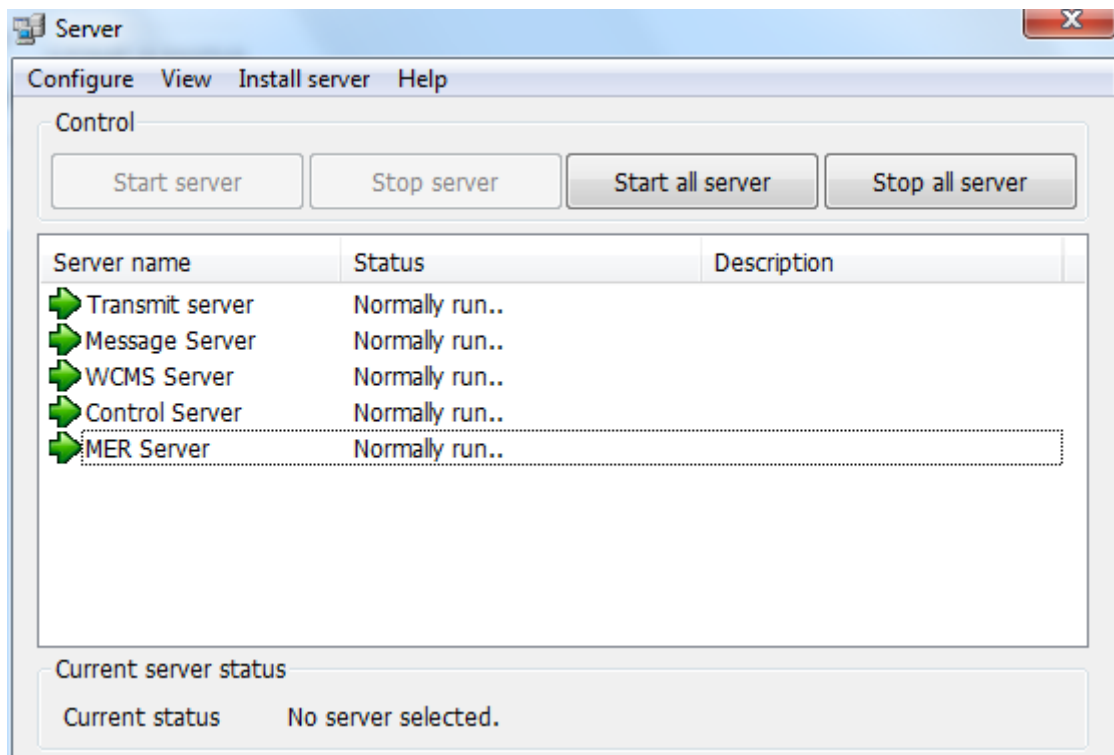
InstallShield

< Back Next > Cancel



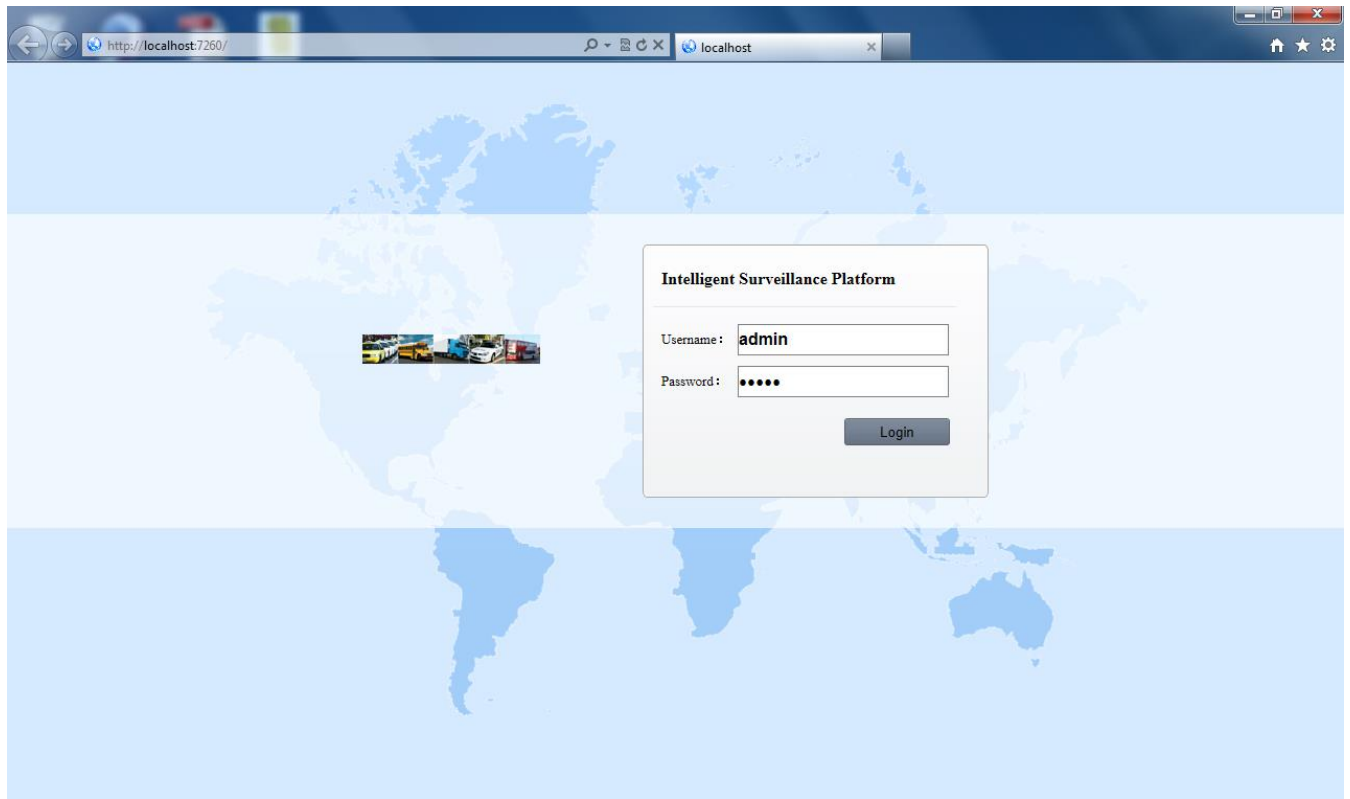
If you test the MDVR and CMS in LAN (WIFI or RJ45 cable), then please don't change this IP. But if you test 3G transmission, please setup the IP as WAN IP here.

After the installation, on the right down bottom, there is a server icon .



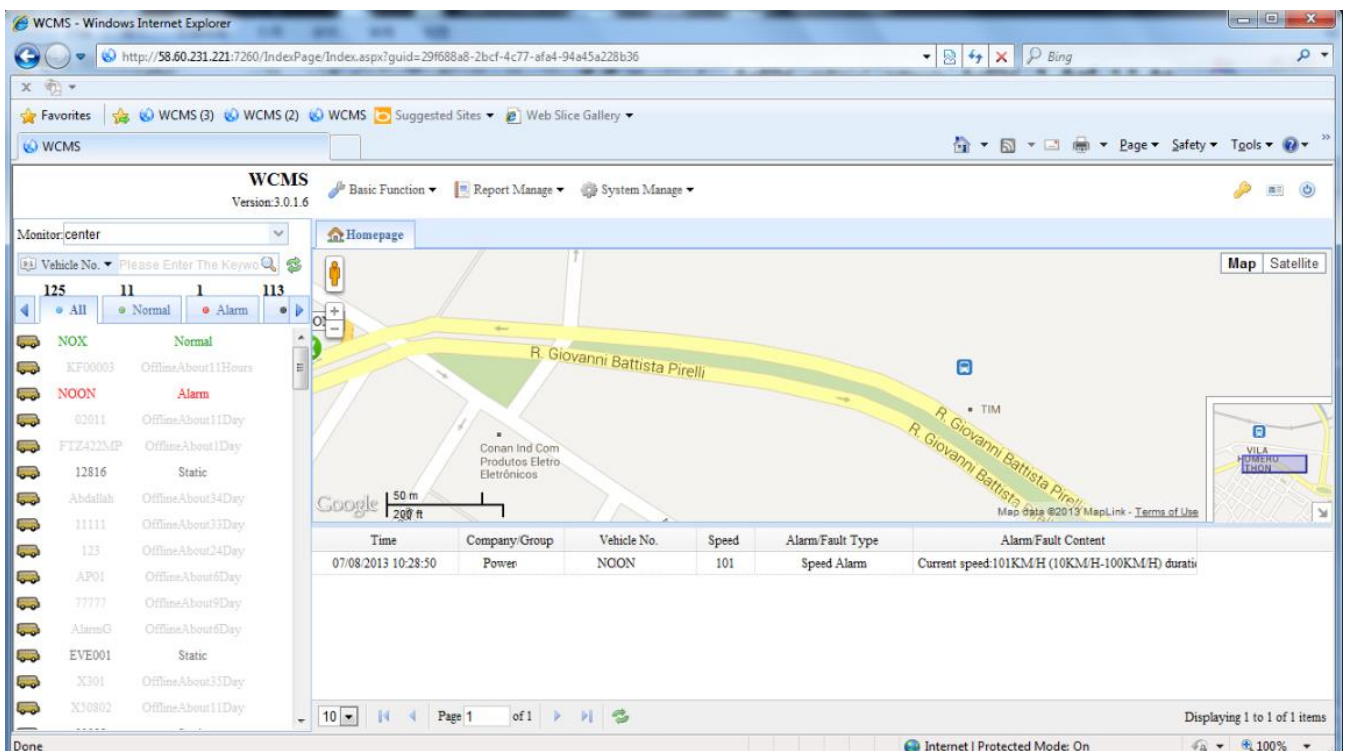
The green icons in front of each server means it run normally, otherwise, please check the installation, or click on this server— Install server—uninstall current server first—Install the current server again.

Double click on the message server to check the online information of vehicle and client.



3.3 Home page

The layout of the home page is as following, vehicle fleet, map and the alarm information.



WCMS - Windows Internet Explorer

http://58.60.231.221:7260/IndexPage/Index.aspx?guid=29f088a8-2bcf-4c77-afa4-94a5a228b36

WCMS Version: 3.0.1.6

Monitor: center

Vehicle No. 125 11 113

Normal Alarm

NOX KF00003 Offline>About 11Hours

NOON 02011 Offline>About 11Day

FTZ422MP 12816 Offline>About 1Day

Abdallah 11111 Offline>About 33Day

123 Offline>About 24Day

AP01 Offline>About 6Day

77777 Offline>About 9Day

AlarmG Offline>About 6Day

EVE001 Static

X301 Offline>About 35Day

X30802 Offline>About 11Day

R. Giovanni Battista Pirelli

Conan Ind Com Produtos Eletro Eletrônicos

50 m 200 ft

Time	Company/Group	Vehicle No.	Speed	Alarm/Fault Type	Alarm/Fault Content
07/08/2013 10:28:50	Power	NOON	101	Speed Alarm	Current speed:101KM/H (10KM/H-100KM/H) durati

Page 1 of 1

Displaying 1 to 1 of 1 items

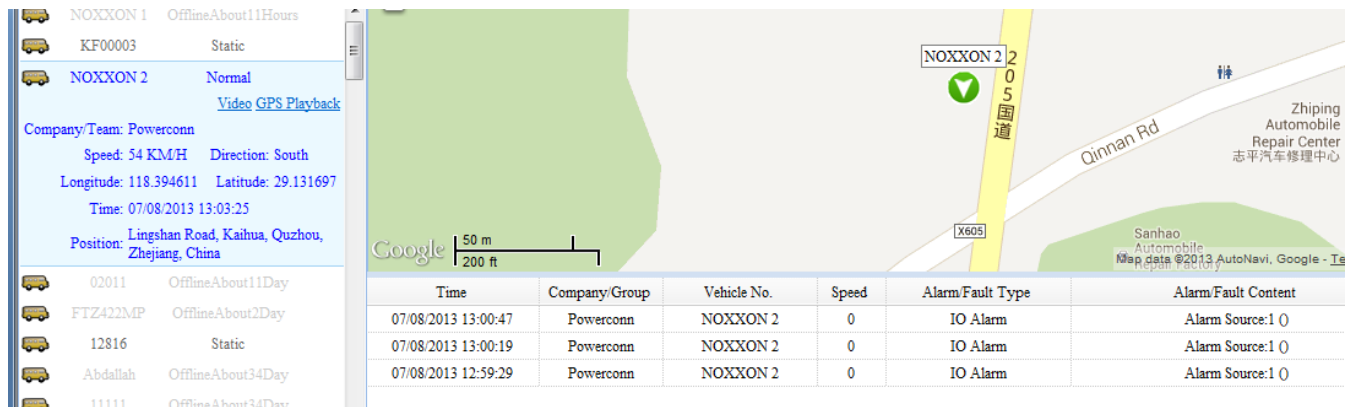
Internet | Protected Mode: On

Vehicle fleet:

Green means online vehicle without alarm

Red means online vehicle which has alarm

Click on one vehicle to show the real time location of this vehicle, also, the details will be shown below the vehicle icon

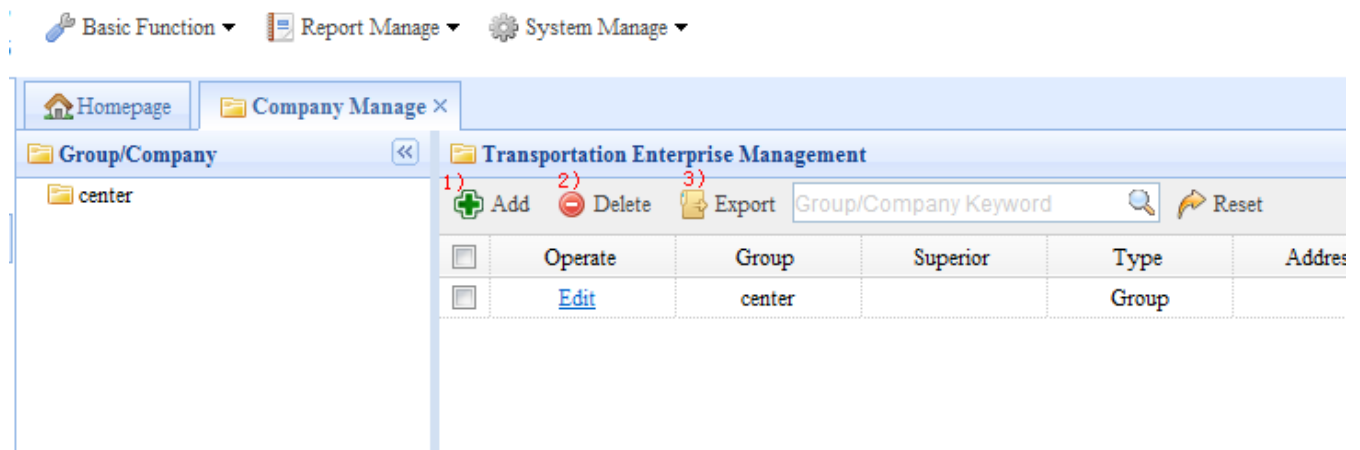


Time	Company/Group	Vehicle No.	Speed	Alarm/Fault Type	Alarm/Fault Content
07/08/2013 13:00:47	Powerconn	NOXXON 2	0	IO Alarm	Alarm Source:1 0
07/08/2013 13:00:19	Powerconn	NOXXON 2	0	IO Alarm	Alarm Source:1 0
07/08/2013 12:59:29	Powerconn	NOXXON 2	0	IO Alarm	Alarm Source:1 0

3.4 Basic function

Basic function is for company/group, vehicle, device and user management

3.4.1 Company management



Operate	Group	Superior	Type	Address
Edit	center		Group	

1) Add a company/group

Click on Add button to add a company/group



Company Manage ×

ny <<

Name: test * Superior: center * Type: Group

Phone Number: WAN IP: 58.60.231.221 Transmit Port: 17891

Address:

✓ Apply ✗ Cancel

Name: company/group name

Superior: choose father group

Type: Company or group

Phone Number: not necessary

WAN IP: the server's WAN IP address, so the client in WAN can apply video from this server.

Transmit Port: 17891 this port is for video out to CMS client from the server.

Address: company address, not necessary

After input the above information, click on Apply button to save to database, click on Cancel to return.

2) **Delete a company/group**

Choose a company/group to delete.

3) **Export a company/group**

Export the company/group information to local disk, this information is saved to a excel document.

3.4.2 Vehicle management

Vehicle Manage ×


Vehicle List

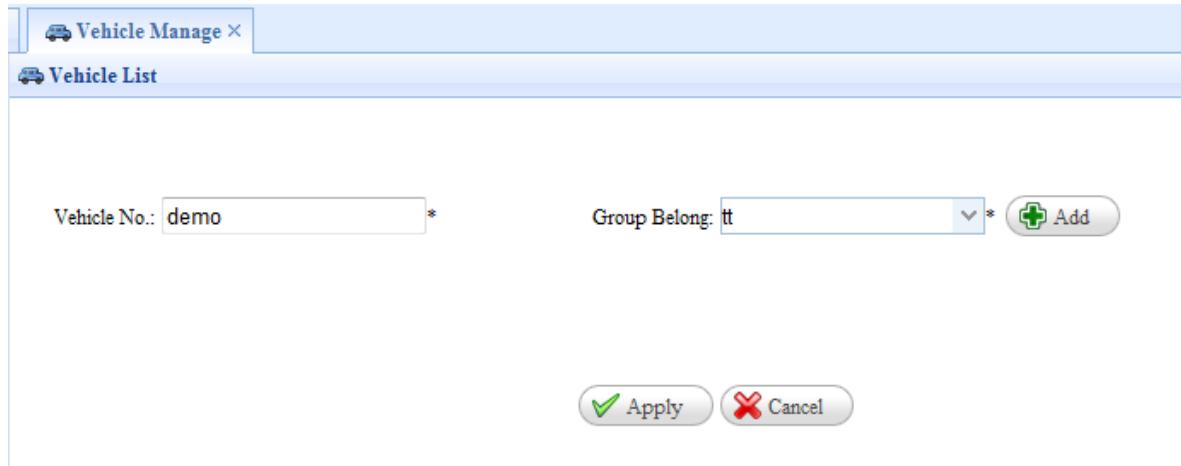
+ Add - Delete ↺ Reload Group Vehicle No. Keyword 🔍 ↺ Reset

Operate	Vehicle No.	Group
---------	-------------	-------

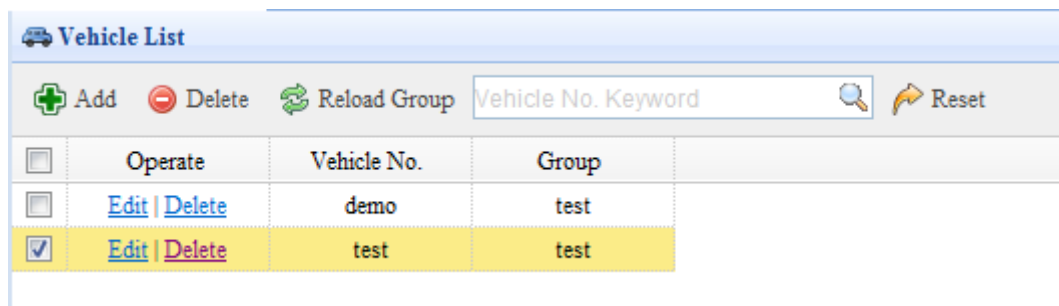
1) **Add a vehicle**




Click on  Add to add a vehicle, input the vehicle No. and then choose the group for this vehicle.



2) Delete/Edit a vehicle



<input type="checkbox"/>	Operate	Vehicle No.	Group
<input type="checkbox"/>	Edit Delete	demo	test
<input checked="" type="checkbox"/>	Edit Delete	test	test

Choose one vehicle and then click on  to edit/delete a vehicle

For multi vehicle delete, please choose those vehicles and click on  Delete to delete them.

3.4.3 Device management

1) Add a device

Click on Add to add a device, input the Device ID, Sim Card Number, group, vehicle N. , and so on.

Device Manage ×

Device List

Device ID: *

Company/Group: *

WAN IP:

Transmit Port:

Install Date:


Sim Card Number: *




Vehicle No.: *

Channel Count:

Install Person:

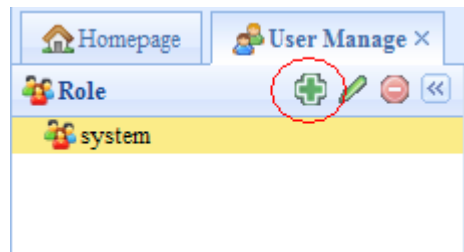
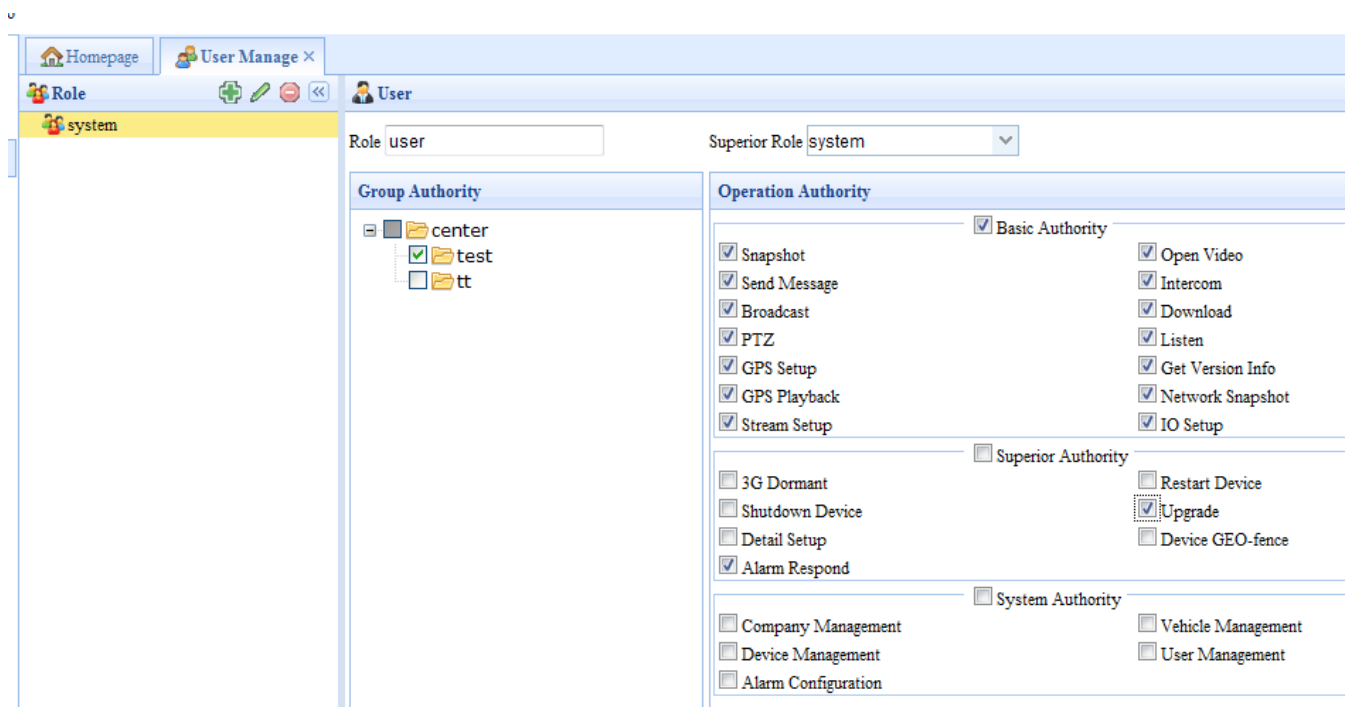
2) Delete/Edit a device

Choose a device and then click on [Edit](#) | [Delete](#) to edit/delete one device, or choose several device and click on  to delete all of them.

			Device ID
<input type="checkbox"/>	Operate		Device ID
<input checked="" type="checkbox"/>	Edit Delete		1436

3.4.4 User management

1) Add a role(user group)



Click on add button

to add a role (user group), then setup the role

name, assign a vehicle group for this role, and limit the authority for this role.

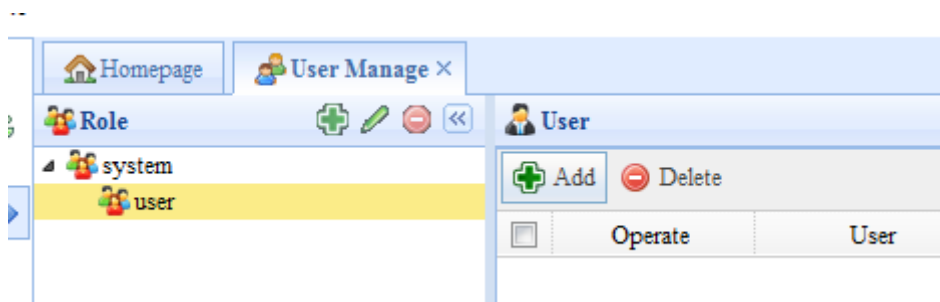


Click on the

following two mark to edit/delete a role.


After the user under this group login, he can only see his own vehicle group and do the operations in right part which is tipped.

2) Add a user



Then,

choose this user group

and click on  Add to add a user and setup the password.



Role * User *

Password * Name

Phone Number Email

MSN




Click on Apply button to save the user information

3) Delete/Edit a user

<input type="button" value="✚ Add"/> <input type="button" value="✖ Delete"/>			
<input type="checkbox"/>	Operate	User	Real Name
<input type="checkbox"/>	Edit Delete	cannie	cannie
<input checked="" type="checkbox"/>	Edit Delete	Ray	ray

Choose on user and click on [Edit](#) | [Delete](#) to Edit/Delete a user, for multi user delete, click on to delete them after choosing them.

3.4.5 Change password

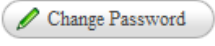
on ▾  Report Manage ▾  System Manage ▾ 

User Manage ×
Change Password ×

Old Password

New Password

Confirm Password





Telephone	Email	MSN

If you want to change the password, please click on the key button in right-top conner.

3.5 Report form

3.5.1 GPS information

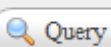
 Homepage


 GPS Info ×

Vehicle Positioning Information Statistics

Company/The Team:


Start Time:





Vehicle No.:

End Time:



Choose a group/vehicle and setup the start time/end time to get the GPS information.

3.5.2 GPS detail information

Choose a group/vehicle and setup the start time/end time to get the GPS information

System Time	GPS Time	Vehicle No.	Company	Speed (KM/H)	Longitude	Latitude	Direction
07/08/2013 09:40:16	07/07/2013 19:54:20	NOX	Power P	0	-46.580433	-23.618488	West
07/08/2013 09:40:16	07/07/2013 19:54:30	NOX	Power P	0	-46.580433	-23.618488	West
07/08/2013 09:40:16	07/07/2013 19:54:39	NOX	Power P	0	-46.580433	-23.618488	West
07/08/2013 09:40:16	07/07/2013 19:54:49	NOX	Power P	0	-46.580433	-23.618488	West
07/08/2013 09:40:16	07/07/2013 19:54:59	NOX	Power P	0	-46.580433	-23.618488	West
07/08/2013 09:40:16	07/07/2013 19:55:10	NOX	Power P	9	-46.580465	-23.618525	West
07/08/2013 09:40:16	07/07/2013 19:55:19	NOX	Power P	18	-46.580978	-23.618522	West
07/08/2013 09:40:16	07/07/2013 19:55:30	NOX	Power P	18	-46.581107	-23.618330	North
07/08/2013 09:40:16	07/07/2013 19:55:39	NOX	Power P	36	-46.580965	-23.617597	North
07/08/2013 09:40:16	07/07/2013 19:55:50	NOX	Power P	54	-46.580735	-23.616330	North
07/08/2013 09:40:16	07/07/2013 19:55:59	NOX	Power P	38	-46.580350	-23.615268	East
07/08/2013 09:40:16	07/07/2013 19:56:10	NOX	Power P	18	-46.579293	-23.615242	East
07/08/2013 09:40:17	07/07/2013 19:56:20	NOX	Power P	0	-46.579237	-23.615265	East
07/08/2013 09:40:17	07/07/2013 19:56:30	NOX	Power P	0	-46.579237	-23.615265	East

3.5.3 Vehicle alarm

List out the alarm time/type information

[Homepage](#)
[GPS Details ×](#)
[Vehicle Alarm ×](#)

Vehicle Fault Alarm Statistics

Company/Team:
Power P

Vehicle No.:
Check All,EVE001,EVE002

Start Time:
2013-07-07 10:56:23

Query

Print

Type:
Check All,IO Alarm,Disk Full

End Time:
2013-07-08 10:56:23

Export

System Time	GPS Time	Vehicle No.	Company	Type	Information	Speed (KM/H)
7/08/2013 09:01:50	07/07/2013 15:38:56	NOX	Power P	Speed Alarm	Current speed:101KM/H (10KM/H-100KM/H) duration: 6s	101
7/08/2013 09:01:50	07/07/2013 15:40:07	NOX	Power P	Speed Alarm	Current speed:103KM/H (10KM/H-100KM/H) duration: 6s	103
7/08/2013 09:01:50	07/07/2013 15:40:43	NOX	Power P	Speed Alarm	Current speed:101KM/H (10KM/H-100KM/H) duration: 6s	99
7/08/2013 09:01:50	07/07/2013 15:41:52	NOX	Power P	Speed Alarm	Current speed:104KM/H (10KM/H-100KM/H) duration: 6s	104
7/08/2013 09:01:51	07/07/2013 15:49:42	NOX	Power P	Speed Alarm	Current speed:101KM/H (10KM/H-100KM/H) duration: 6s	101
7/08/2013 09:01:51	07/07/2013 15:51:28	NOX	Power P	Speed Alarm	Current speed:101KM/H (10KM/H-100KM/H) duration: 6s	101
7/08/2013 09:01:51	07/07/2013 15:52:24	NOX	Power P	Speed Alarm	Current speed:101KM/H (10KM/H-100KM/H) duration: 6s	101
7/08/2013 09:01:51	07/07/2013 15:53:08	NOX	Power P	Speed Alarm	Current speed:104KM/H (10KM/H-100KM/H) duration: 6s	104
7/08/2013 09:01:51	07/07/2013 15:55:46	NOX	Power P	Speed Alarm	Current speed:103KM/H (10KM/H-100KM/H) duration: 6s	103
7/08/2013 09:01:52	07/07/2013 15:57:40	NOX	Power P	Speed Alarm	Current speed:103KM/H (10KM/H-100KM/H) duration: 6s	103
7/08/2013 09:01:52	07/07/2013 15:58:23	NOX	Power P	Speed Alarm	Current speed:103KM/H (10KM/H-100KM/H) duration: 6s	103
7/08/2013 09:01:53	07/07/2013 15:59:22	NOX	Power P	Speed Alarm	Current speed:104KM/H (10KM/H-100KM/H) duration: 6s	104
7/08/2013 09:02:00	07/07/2013 16:33:56	NOX	Power P	IO Alarm	Alarm Source:1 ()	9
7/08/2013 09:02:00	07/07/2013 16:36:58	NOX	Power P	IO Alarm	Alarm Source:1 ()	0

3.5.4 Over speed

Start Time	End Time	Statistical Duration	Overspeed Count
07/07/2013 10:58:27	07/08/2013 10:58:27	1 Day 0 Hour 0 Minute	0
07/07/2013 10:58:27	07/08/2013 10:58:27	1 Day 0 Hour 0 Minute	0
07/07/2013 10:58:27	07/08/2013 10:58:27	1 Day 0 Hour 0 Minute	0
07/07/2013 10:58:27	07/08/2013 10:58:27	1 Day 0 Hour 0 Minute	0
07/07/2013 10:58:27	07/08/2013 10:58:27	1 Day 0 Hour 0 Minute	42

3.5.5 User online

Display the user's login/log out time.

Homepage User Online ×			
Users Online Statistics			
Role: <input type="text" value="system"/>	Start Time: <input type="text" value="2013-07-07 10:59:42"/>	Query	Print
User: <input type="text" value="Check All,admin"/>	End Time: <input type="text" value="2013-07-08 10:59:42"/>	Export	
User	Online Time	Offline Time	Online Duration
admin	07/08/2013 08:29:40	07/08/2013 08:35:10	0 Day 0 Hour 5 Minute
admin	07/08/2013 08:35:15	07/08/2013 09:04:36	0 Day 0 Hour 29 Minute
admin	07/08/2013 08:54:58	07/08/2013 09:09:11	0 Day 0 Hour 14 Minute
admin	07/08/2013 08:54:58	07/08/2013 09:15:01	0 Day 0 Hour 20 Minute
admin	07/08/2013 09:11:57	07/08/2013 09:15:57	0 Day 0 Hour 4 Minute
admin	07/08/2013 09:16:05	07/08/2013 09:55:03	0 Day 0 Hour 38 Minute
admin	07/08/2013 09:21:52	07/08/2013 09:22:29	0 Day 0 Hour 0 Minute
admin	07/08/2013 09:21:52	07/08/2013 09:42:03	0 Day 0 Hour 20 Minute
admin	07/08/2013 09:22:49	07/08/2013 10:11:44	0 Day 0 Hour 48 Minute

3.5.6 User details

Show you what the user has done after login.

Homepage User Online × User Details ×					
User Operations Log Statistics					
Role: <input type="text" value="system"/>	Log Source: <input type="text" value="wcms"/>	Start Time: <input type="text" value="2013-07-07 11:00:06"/>	Query	Print	
User: <input type="text" value="Check All,admin"/>	Log Type: <input type="text" value="Check All,Add Group,Edit"/>	End Time: <input type="text" value="2013-07-08 11:00:06"/>	Export		
Date/Time	User	Log Source	Log Type	Log Content	Rema
07/08/2013 08:31:08	admin	wcms	Delete Device	dns:mdvr0001;dns:mdvr0002;dns:mdvr0003;dns:mdvr0004;dn	
07/08/2013 08:31:18	admin	wcms	Delete Device	dns:mdvr0021;dns:mdvr0022;dns:mdvr0023;dns:mdvr0024;dn	
07/08/2013 08:34:52	admin	wcms	Delete Group	moni	
07/08/2013 08:35:31	admin	wcms	Delete Device	dns:F3R01;dns:S2802;dns:X11801;dns:X301;dns:X303;dns:X	
07/08/2013 08:35:41	admin	wcms	Delete Vehicle	S28-1;F3R;S28-2;X11;X3-1;X3-3;X50801;X50802;X50803	
07/08/2013 08:35:57	admin	wcms	Add Vehicle	X50801	
07/08/2013 08:36:08	admin	wcms	Add Device	dns:X50801	
07/08/2013 08:54:10	admin	wcms	Query Report	User Details	

3.6 System management

3.6.1 Alarm message and Mail configuration

This function is for server to send email/short message when certain type alarm information is reported to server.



Homepage	User Online ×	User Details ×	Alarm Message And Mail Configuration ×		
Alarm Mail Configuration					
Alarm Type	Phone Num.	Messenger	Recipients(Use ';' Separation)	Send Frequency	Time
IO Alarm	15813909866	IO alarm	dpwan@streamaxtech.com	Immediately	

Send frequency

Immediately: once server receives IO alarm, send email or SMS to administrator immediately.

O'clock: send the alarm information on clock. For example, you setup it as 8:00:00 ~16:00:00. Then the server will send all the alarm information between 8 ~9 to administrator at 9 o'clock. The other alarms happened exceeds this time range won't be send.

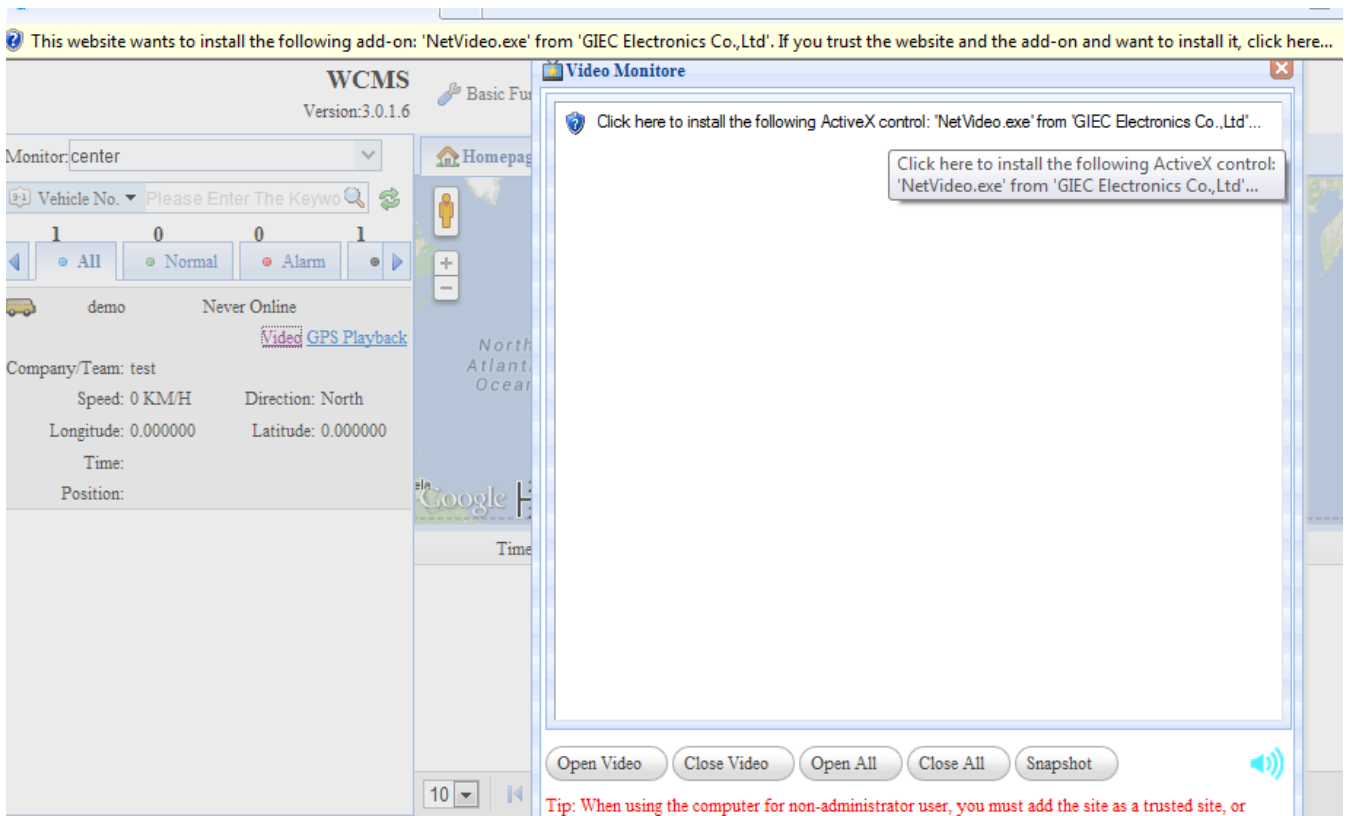
Timing: send all the alarm information to administrator at the setup time.

3.6.2 Alarm message and Mail configuration

Setup the servers sender email account.

Basic Function ▾ Report Manage ▾ System Manage ▾				
Homepage	User Online ×	User Details ×	Alarm Message And Mail Configuration ×	Configure Account For Message And Email ×
Account For Message				
User Name:	streamax	Password:	stream	
Account For Email				
Email Address:	streamax_testing@163.com	Display Name:	streamax_wandiping	
User Name:	streamax_testing	Password:	streamax	
Smtp Server:	smtp.163.com	Port:	25	
Subject:	alarm	Body:	http://58.60.231.218:12122	

3.7 Video



Click the vehicle in left part vehicle list, and choose Video to open the video on IE page. For the first time to open a video, it will show you to install active X.

WCMS
Version: 3.0.1.6

Monitor: center

Vehicle No. Please Enter The Keyword

125 12 0 113

All Normal Alarm

NOXXON 1 Normal
Video GPS Playback

Company/Team: Powerconn
Speed: 27 KM/H Direction: West
Longitude: -46.514967 Latitude: -23.664400
Time: 07/07/2013 23:32:43
Position: Avenida Santos Dumont - Pista Lateral, 743 - Bairro Casa Branca, Santo André - São Paulo, 09015-330, Brazil

KF00003 Offline About 11 Hours
NOXXON 2 Overspeed
02011 Offline About 11 Day
FTZ422MP Offline About 1 Day
12816 Static
Abdallah Offline About 34 Day
11111 Offline About 33 Day

Video Monitor

1 dns:00002 - 1 07/07/2013 23:33:09

2 dns:00002 - 2 07/07/2013 23:33:04

3 dns:00002 - 3 07/07/2013 23:33:07

4 dns:00002 - 4 07/07/2013 23:33:04

Open Video Close Video Open All Close All Snapshot

Tip: When using the computer for non-administrator user, you must add the site as a trusted site, or screenshot function is invalid!

3.8 GPS Playback

Click on the vehicle icon and choose GPS playback

Playlist

Date has GPS info **[Highlight]**

◀◀	Jul	2013	▶▶			
Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

Then pull down the bar to setup the start time and end time for GPS route

Playlist

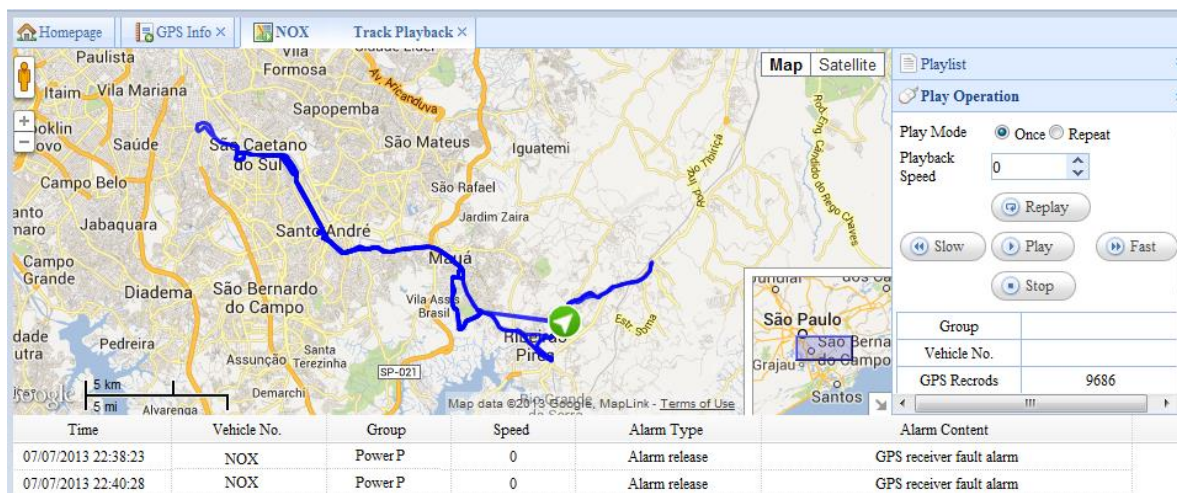
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

Please setup the period you want to search!

Start Time:

End Time:

Then click on Load Tracking Line to playback GPS route



The screenshot shows the 'Track Playback' window. The map displays a blue route through São Paulo. On the right, the 'Play Operation' panel includes controls for Play Mode (Once/Repeat), Playback Speed (0), and buttons for Replay, Slow, Play, Fast, and Stop. Below the map, a table lists alarm information:

Time	Vehicle No.	Group	Speed	Alarm Type	Alarm Content
07/07/2013 22:38:23	NOX	Power P	0	Alarm release	GPS receiver fault alarm
07/07/2013 22:40:28	NOX	Power P	0	Alarm release	GPS receiver fault alarm

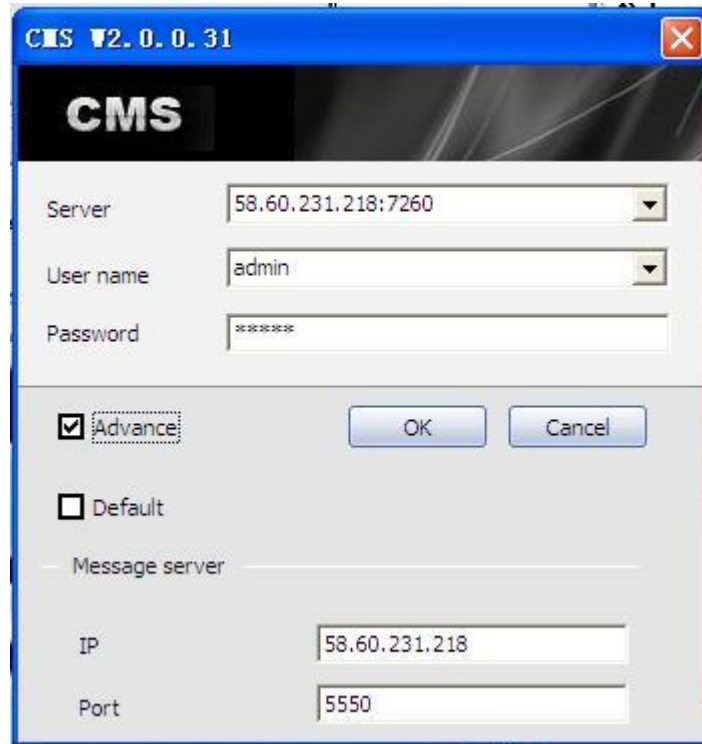
The alarm information during this period will be listed out below.

4 CMS client

Please login the server to download CMS client first or ask the administrator for it.

Please double click the exe file and click NEXT to finish the installation.

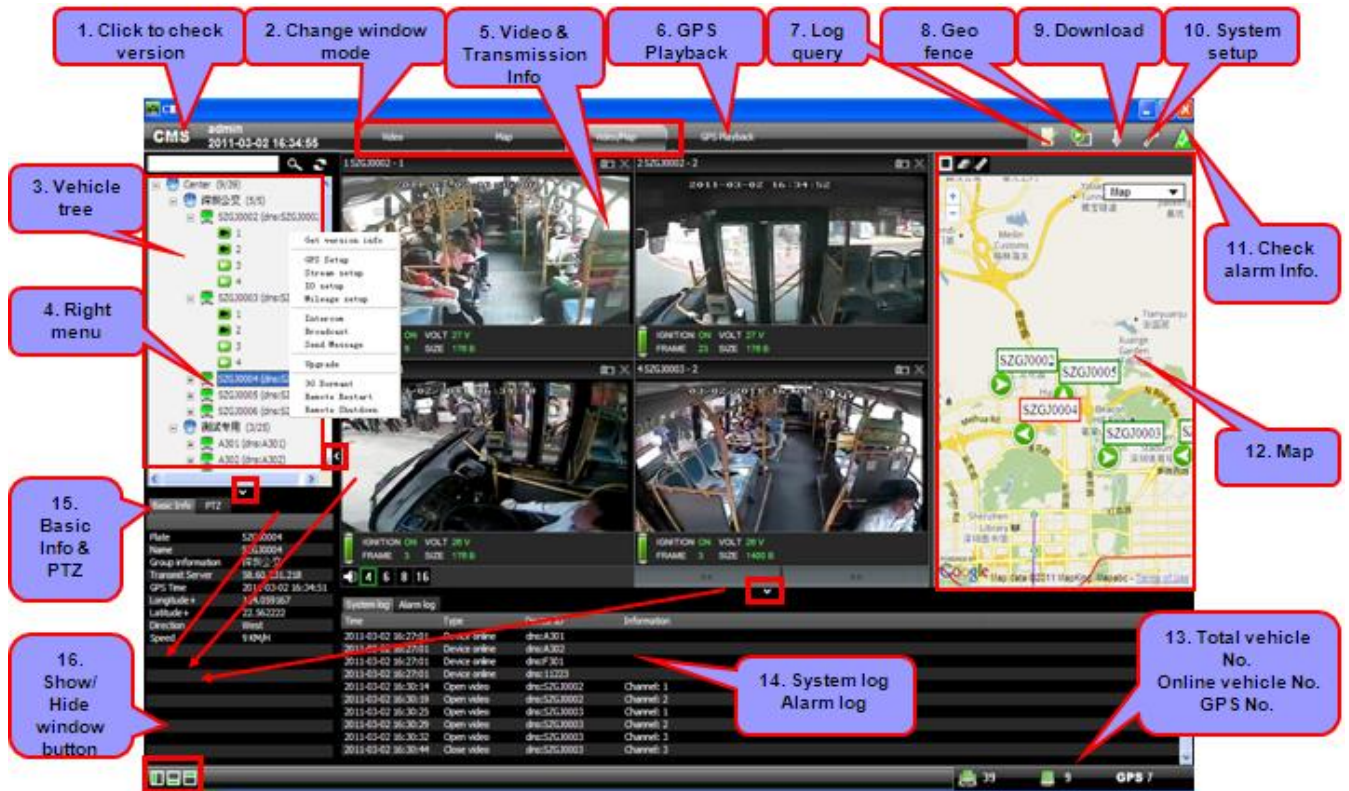
4.1 Network Setup

A screenshot of the CMS V2.0.0.31 Network Setup dialog box. The dialog has a blue title bar with the text "CMS V2.0.0.31" and a close button. The main area is white with a black header bar containing the text "CMS". Below the header, there are three input fields: "Server" with a dropdown menu showing "58.60.231.218:7260", "User name" with a dropdown menu showing "admin", and "Password" with a text box containing "26 26 26 26 26". Below these fields, there are two radio buttons: "Advance" (checked) and "Default" (unchecked). To the right of the radio buttons are "OK" and "Cancel" buttons. Below the radio buttons, there is a section titled "Message server" with two input fields: "IP" with a text box showing "58.60.231.218" and "Port" with a text box showing "5550".

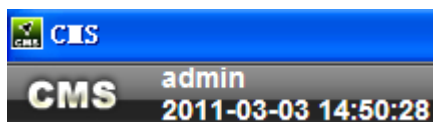
Sever IP is the IP of the PC installed transmit sever, if transmit sever is in LAN with CMS client, the sever IP should be LAN IP. If you connect to sever via WAN, then the IP should be public IP. If the message server and the transmit server are on the same PC, and the port is default 5556, then you can tip Default. Otherwise, please input the message server and port below.

User name and Password: ask the administrator to create for you, and define your authority.

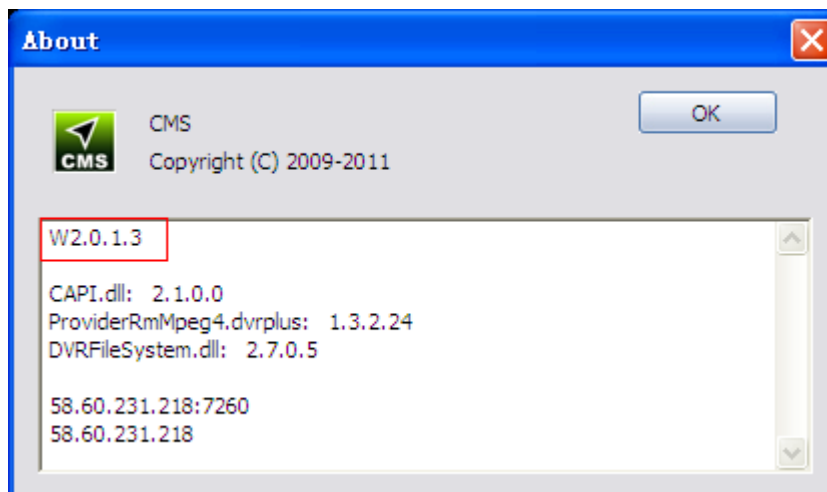
4.2 Functions on GUI



4.2.1 Check version



: click on CMS to check the version number.



4.2.2 Window mode



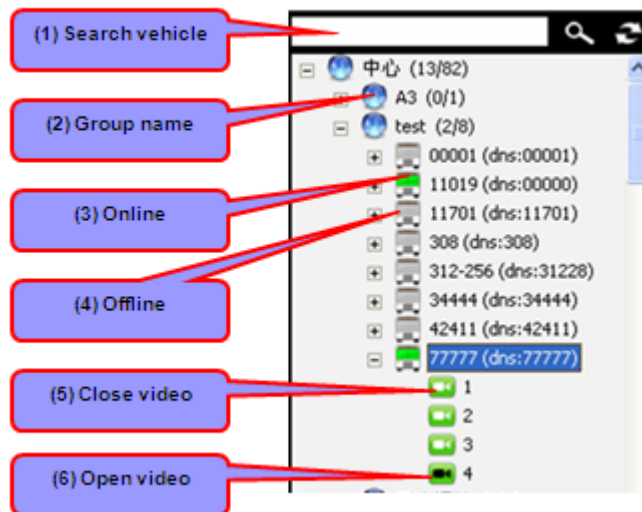
Three button to change to window mode.

Video: video only.

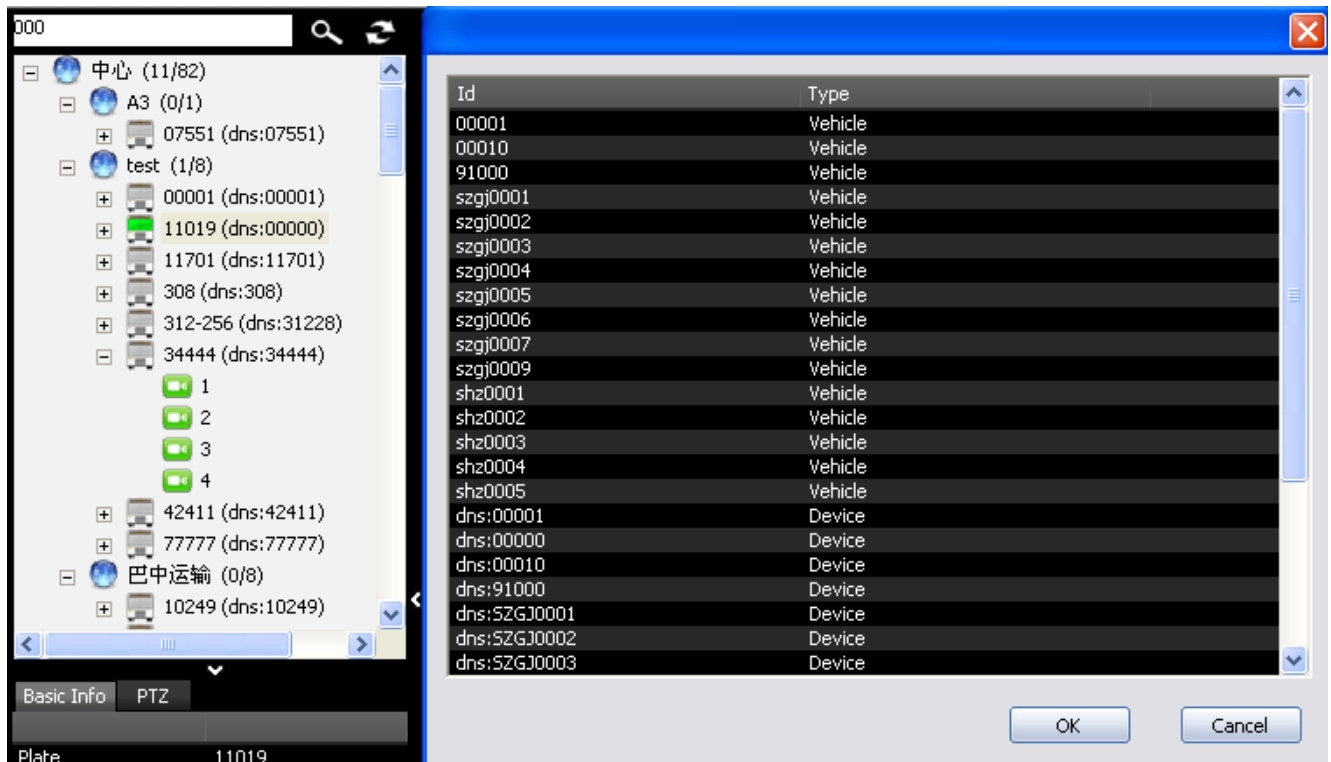
Map: map only.

Video/Map: show video window and map together as the picture above.

4.2.3 Vehicle tree



(1) Type in all or part of vehicle ID, click on search button, it will list all the vehicles matched.



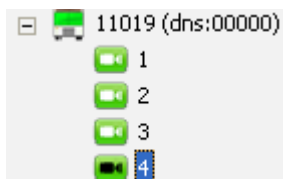
: this is used to refresh the vehicle list.

(2) A3 is the group name, click on this button to expand and show all the vehicles in this group.

(3) If the car icon is green, it means this MDVR is online, then you can apply for video or right click on it to do some operation. And click on the button to show all the cameras. 11019 is the vehicle name. dns:0000 in the bracket is the MDVR ID.

(4) If the car icon is gray, it means this car is offline.

(5) The white cameras of the first 3 channels means there is no video data transmitted, while the black one on the 4th channel means applying for video of this channel.



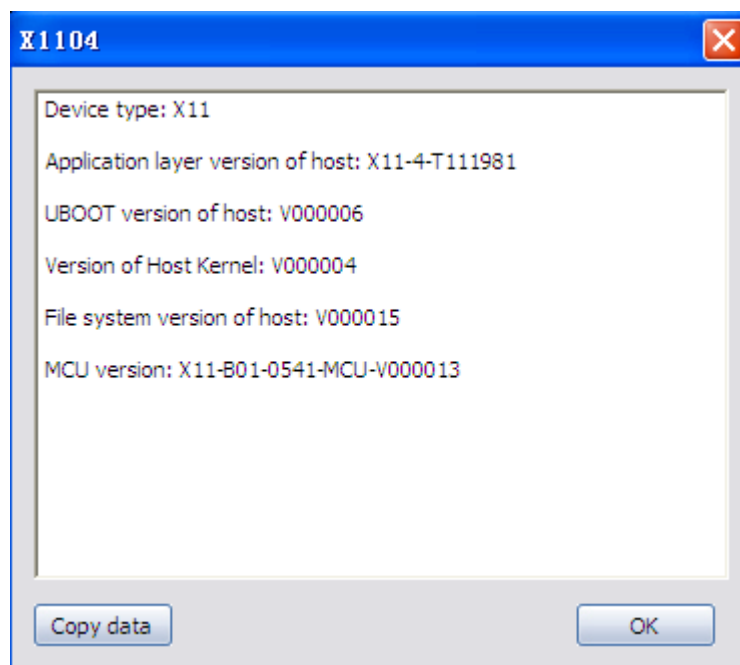
4.2.4 Right click menu

Right click on the online vehicle to do the following operations:



Get version info
GPS Setup
Stream setup
IO setup
Mileage setup
Intercom
Broadcast
Send Message
Upgrade
3G Dormant
Remote Restart
Remote Shutdown

Get version Info:



If the device has some problem, you can get the version information remotely.

GPS Setup:

Setup the GPS upload interval. If you choose close upload GPS, you cannot see the green icon on the map.



02009: Device ID

A dialog box titled "GPS setup 02009" with a blue header and a close button. It contains two radio buttons: "Close upload GPS" (unselected) and "Open upload GPS" (selected). Below these is a text field labeled "Interval" containing the value "10", followed by the word "Second". At the bottom are "OK" and "Cancel" buttons.

GPS setup 02009

☐ Close upload GPS

☒ Open upload GPS

Interval Second

OK Cancel

Stream setup:

A dialog box titled "SetStream" with a blue header and standard window controls. It contains several settings: "Net Mode" set to "Mode 2", "Video Mode" set to "PAL", and "Total Band Width" set to "4096" kbps (with a range of 20 - 4096). Below this is a tabbed interface with a tab labeled "1 - 4". The main area contains a table with columns: "Enable", "Resolution", "Frame", "Quality", and "Bit". There are four rows labeled "Channel 1" through "Channel 4". At the bottom is a "Sub Streaming code" dropdown set to "Fix", and "Ok" and "Cancel" buttons.

SetStream

Net Mode

Video Mode

Total Band Width kbps (20 - 4096)

1 - 4

	Enable	Resolution	Frame	Quality	Bit
Channel 1	<input type="text" value="ON"/>	<input type="text" value="CIF"/>	<input type="text" value="18"/>	<input type="text" value="1"/>	<input type="text" value="1024"/>
Channel 2	<input type="text" value="ON"/>	<input type="text" value="CIF"/>	<input type="text" value="18"/>	<input type="text" value="1"/>	<input type="text" value="1024"/>
Channel 3	<input type="text" value="ON"/>	<input type="text" value="CIF"/>	<input type="text" value="18"/>	<input type="text" value="1"/>	<input type="text" value="1024"/>
Channel 4	<input type="text" value="ON"/>	<input type="text" value="CIF"/>	<input type="text" value="18"/>	<input type="text" value="1"/>	<input type="text" value="1024"/>

Sub Streaming code

Ok Cancel

Here you can setup some parts of the upload stream parameters, so if the transmission speed is not so good, you can change the total bandwidth and the frame to get a better speed.

IO setup:

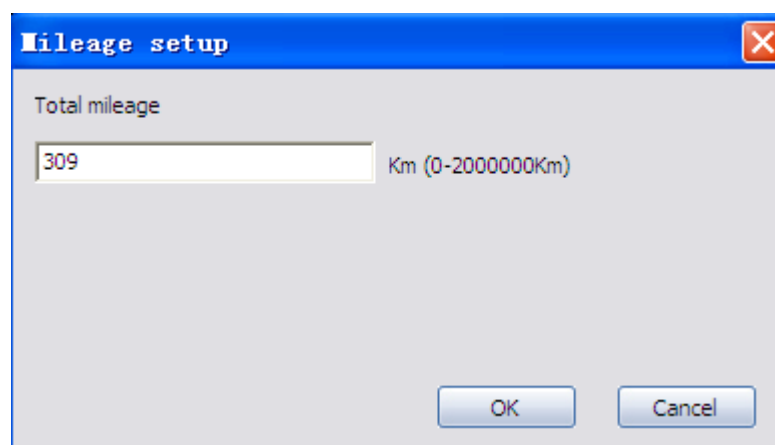


The 'Set IO' dialog box features a tabbed interface with the first tab labeled '1 - 3'. It contains a table with two columns: 'name' and 'Level'. The table lists three items, each with a name in a text box and a level in a dropdown menu. At the bottom, there are 'Ok' and 'Cancel' buttons.

	name	Level
1	121	Low
2	122	Low
3	123	Low

Setup the IO output of the MDVR remotely, you can control the vehicle remotely.

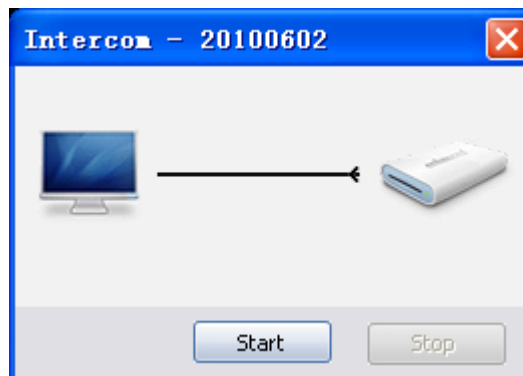
Mileage setup:



The 'Mileage setup' dialog box has a single text input field for 'Total mileage' containing the value '309'. To the right of the input field is the unit 'Km (0-2000000Km)'. At the bottom, there are 'OK' and 'Cancel' buttons.

Setup the total mileage of the vehicle.

Intercom:



For the interphone function, it needs both the CMS and the device has audio input and output.

Attention: if you want to use this function, please follow the steps:

1) On the MDVR, only the fourth channel can be used as the audio input. For the audio output you can use the AV out on the DB44(X11) or AV cable(X3) of the rear panel or the Audio out on the front panel. Please make sure the monitor has the sound amplifier function, otherwise you can not hear audio output.

For the audio in on MDVR, if you use the BNC cable, you need to connect a sound pick-up, the device built-in the camera. It is different with the microphone. The main parameters of the sound pick-up are as following:

Resistance: $600\ \Omega$; Peak-to-peak value: 1VPP

If you use DIN-jack cable, it is more easier, just connect the camera with audio in function to this cable is OK.

2) Please make sure the function is enabled on the MDVR, as the below picture, and the audio of 4th channel must be enabled.

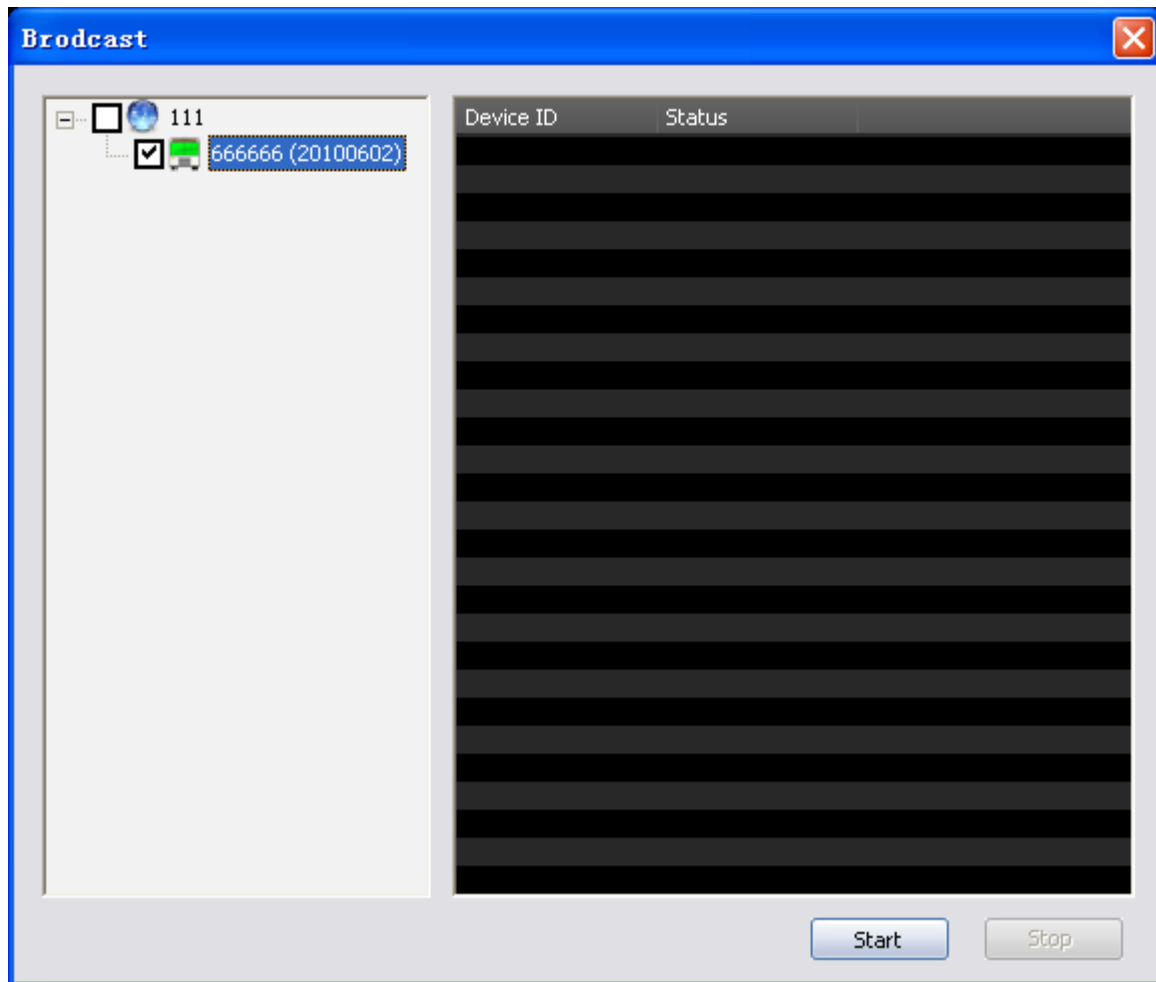
SETUP—RECORD—CHANNEL SETTING.

CHANNEL SETTING

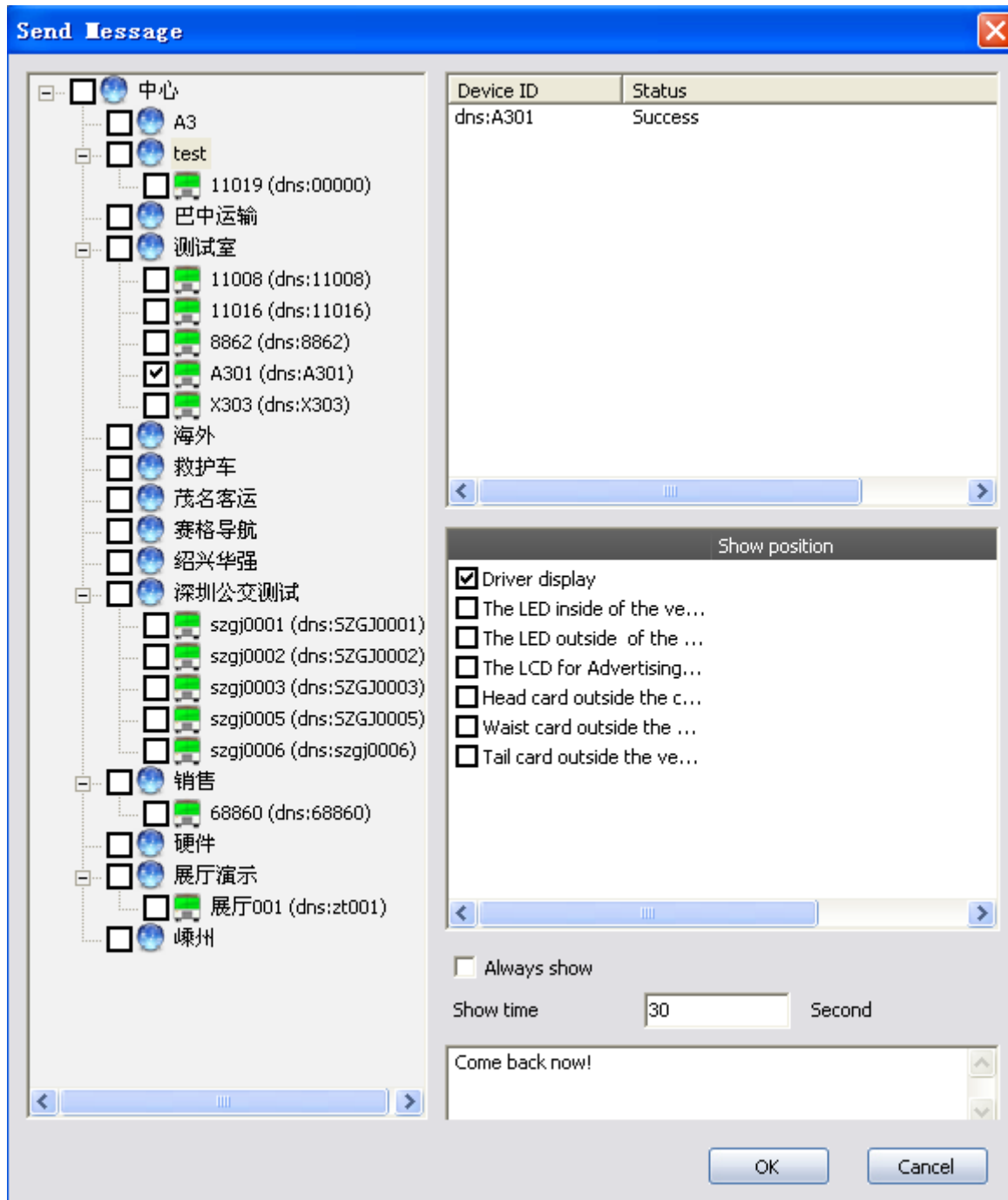
CH ID	EN	NAME	AUDIO	LIVE
CH1	OFF <input type="checkbox"/>		OFF <input type="checkbox"/>	OFF <input type="checkbox"/>
CH2	OFF <input type="checkbox"/>		OFF <input type="checkbox"/>	OFF <input type="checkbox"/>
CH3	OFF <input type="checkbox"/>		OFF <input type="checkbox"/>	OFF <input type="checkbox"/>
CH4	OFF <input type="checkbox"/>		OFF <input type="checkbox"/>	OFF <input type="checkbox"/>
ROUND:		OFF <input type="checkbox"/>	ROUND TIME:	010 (5-300) SEC
VOICE INTERCOM		ON <input type="checkbox"/>		
			SAVE	EXIT

Broad cast:

First, choose the vehicle, or select one group to choose all the vehicles, and then click “start” to broadcast.



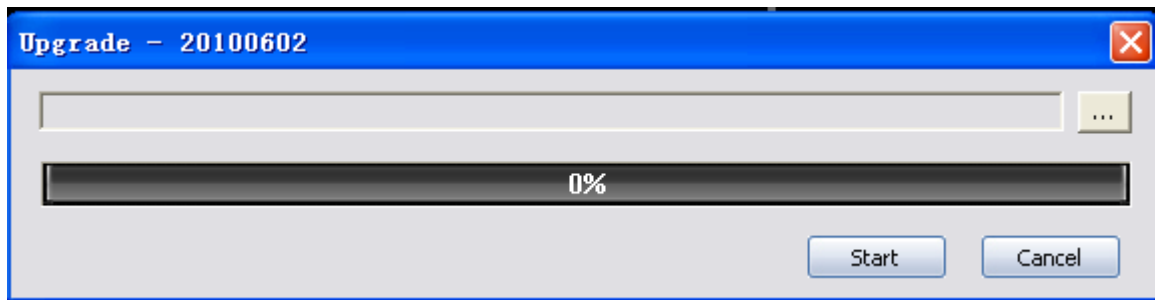
Send message: the MDVR must connect a control panel to support this function.



Please choose the car on left part, choose the position where this message wanted to be shown, choose the show time and input the content in the bottom blank, when the control panel receives this message, it will read it out automatically.

Upgrade:

Please click on  to choose the firmware, and click on Start button to continue the remotely upgrade.



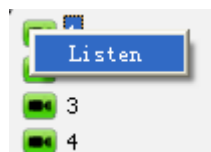
3G dormant: This command will make the 3G module standby, the MDVR keep on recording .

Remote Restart: Restart the MDVR remotely.

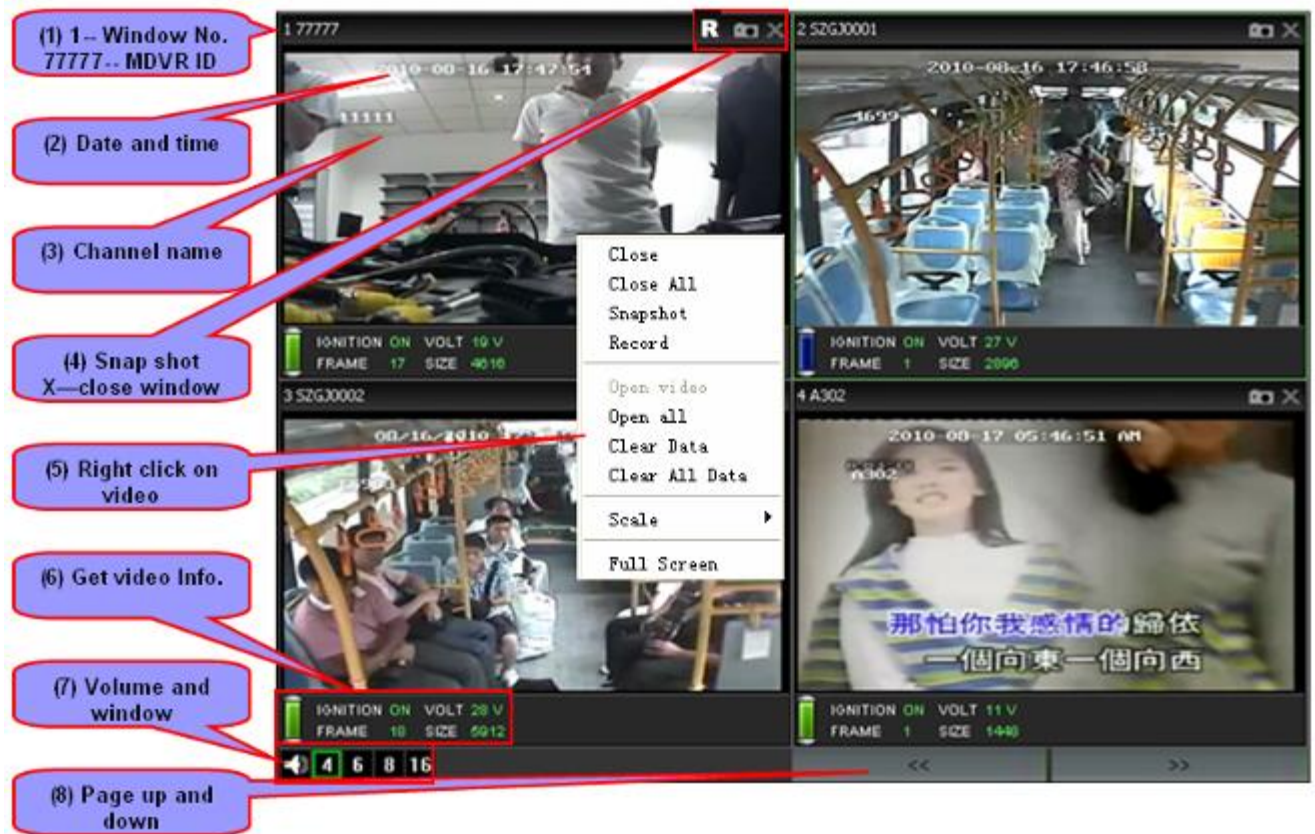
Remote Shutdown: shutdown the MDVR remotely.

Listen: click on one channel to listen the voice from the device.

You can get the voice from the device without open the video to reduce the data transmission. And also for the X11-4CH, X3, MINI3 and D3, when you use the interphone function, the fourth channel will be occupied, so on the CMS client you can not hear the voice of this channel even open the volume switch.



4.2.5 Video & transmission Info.



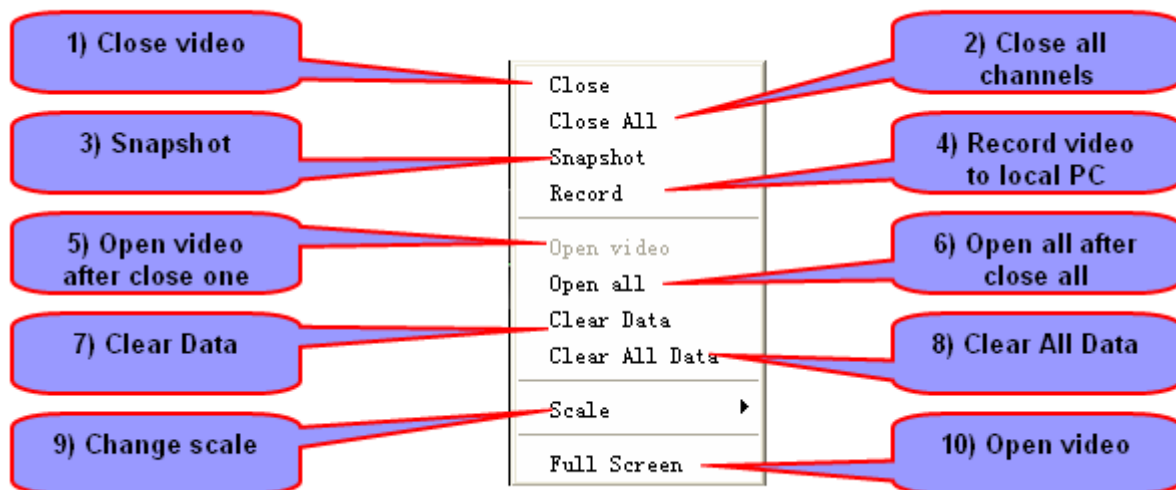
(1) There is only one No. for each video window. When you apply for video, it will show the MDVR ID behind the window No..

(2) After get video, it will show the date and time on the screen of MDVR.

(3) Show the channel name on this window.

(4) Snapshot can be used after get video. The same function with snapshot in list after right click. "X" means close this video.

(5) Right click on the video window, you can do the following operations:



Close video:

Only close the video, but remain the device ID and Channel No. on this window, so next time you can choose 5) open video to open this channel video automatically in this window.

Close All: close all the video windows.

Snapshot: get picture of current window. The save path is configured in system setup. Or click on the camera icon to snapshot



Record: click to record this channel and save to PC. There will be an "R" on right top of this channel.

Note: record means record the video from the CMS, and save path is the one setup in system. And once the network disconnect, it will pack; otherwise pack it every 30 minutes.



Open video: only available when close one channel.

Open all: click to open all closed channels

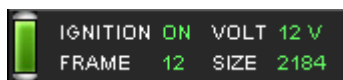
Clear Data: clear all the data of the window you choose, shown as the blow picture, no channel information stays in this window.

Clear all the data: clear all the data of all the current open windows.

Scale: 3 options: default is fulfill the screen; 4:3; 16:9

Full screen: Full screen this channel.

(6) Get video info.



: Green means the CMS is receiving video now.



: can not get video.


VOLT: voltage of the power input.


Frame: the frame in the buffer.

SIZE: data package received now.

(7) Volume and window



Click  this icon to turn on/ turn off the audio. CMS can only play one channel audio currently by click on the video window.

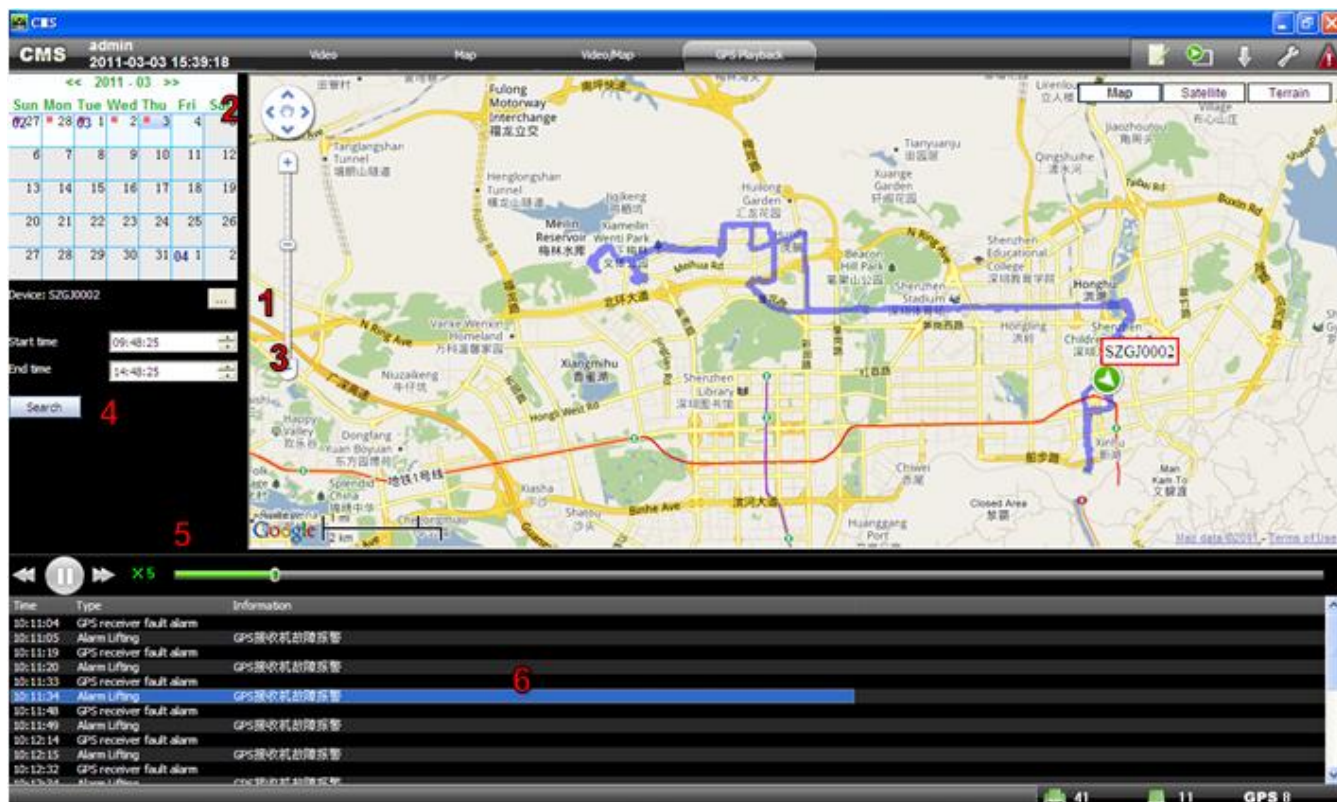
Click  to change the window number.

(8) Page up and down button


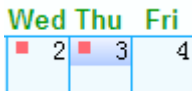



Page up/ page down

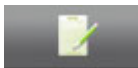
4.2.6 GPS playback

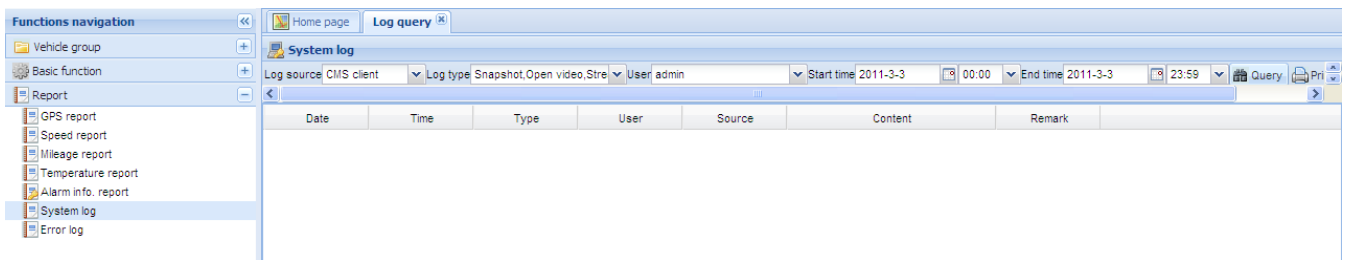


GPS playback is playback the GPS route of this vehicle of specified time slot. Please follow the steps to playback:

1.  Click on this icon to choose a device first.
2.  The red dot on the calendar means there is GPS data at that day. Choose the data please.
3. Setup the start time and end time
4. Click on search to get the GPS data
5.  Buttons for playback operation: slow, pause/start, fast. X5 is the current speed.
6. This is for alarm information. It will load all the alarm information when loading GPS data. You can double click on the alarm information to locate the GPS position.

4.2.7 Log query


Click on the log query button  on right top of the main interface to check the log. It will link to the IE, please login the IE using your own User name and password. Go to report—system log



Setup the source, type, user and time to search.

4.2.8 Geo fence

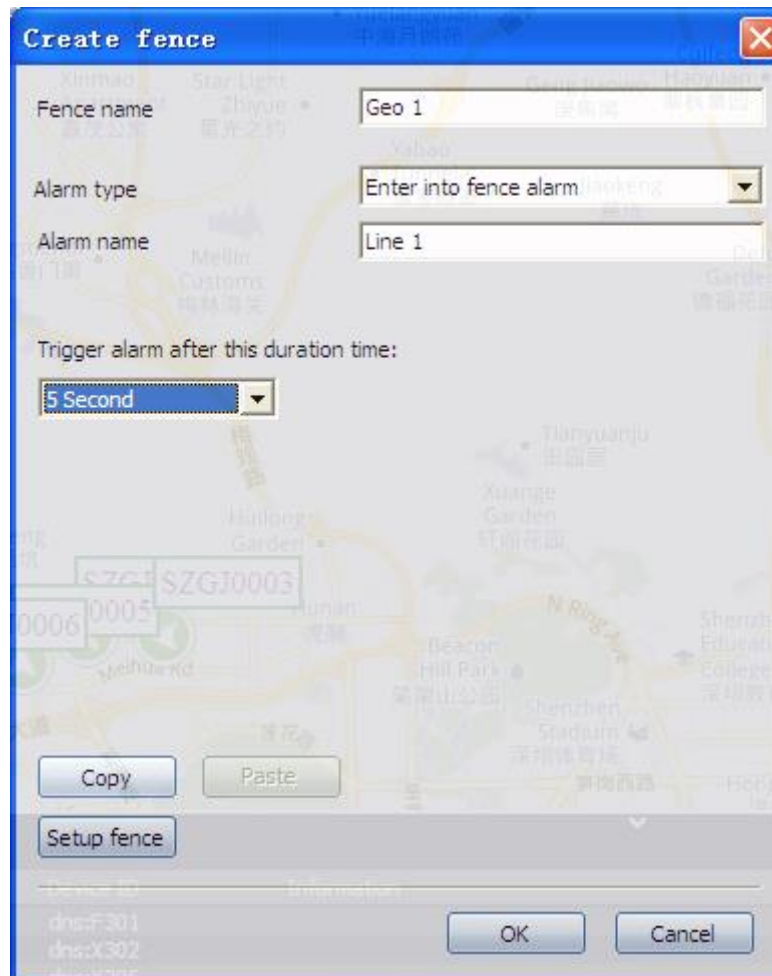
Create fence:

There two ways to enter into the GEO fence setup. Click on the Geo fence button , or click on the vehicle

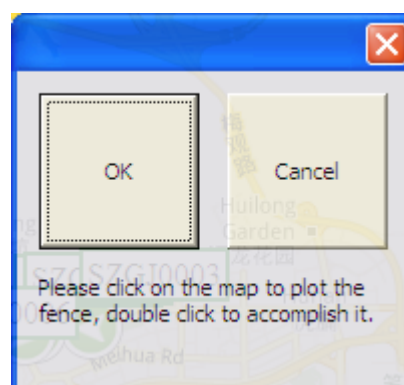


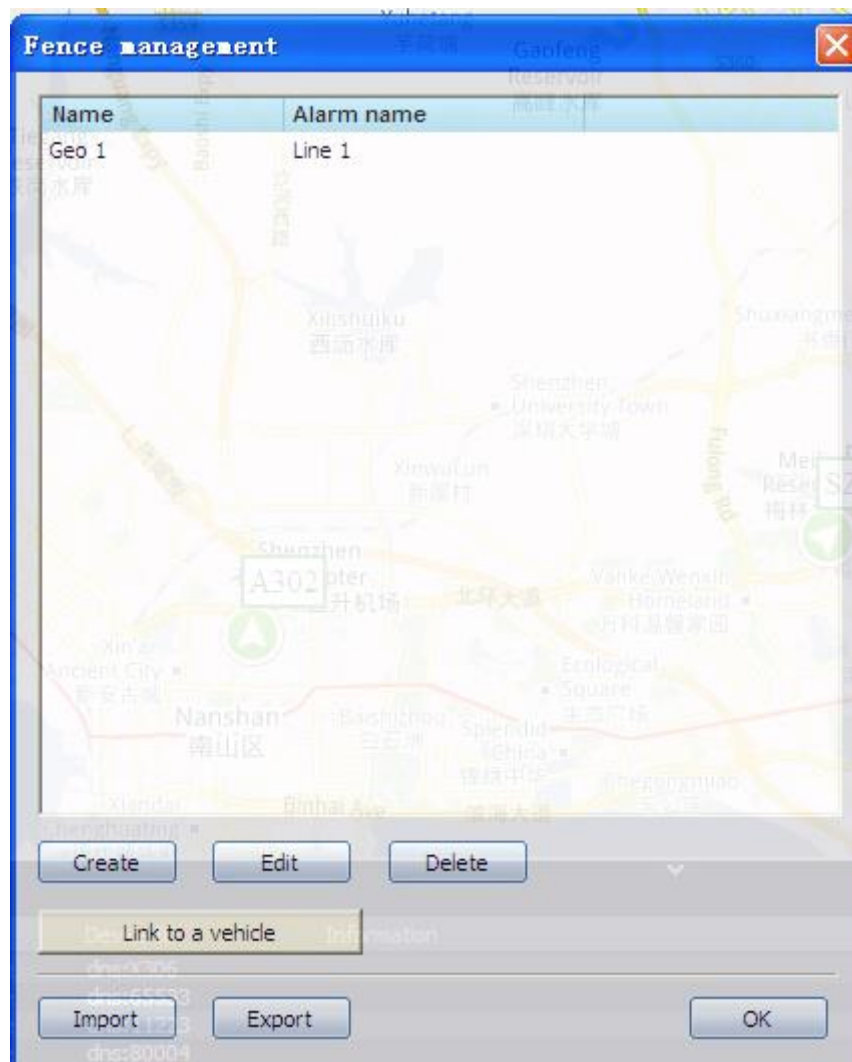
icon and choose GEO fence

www.onetech.us

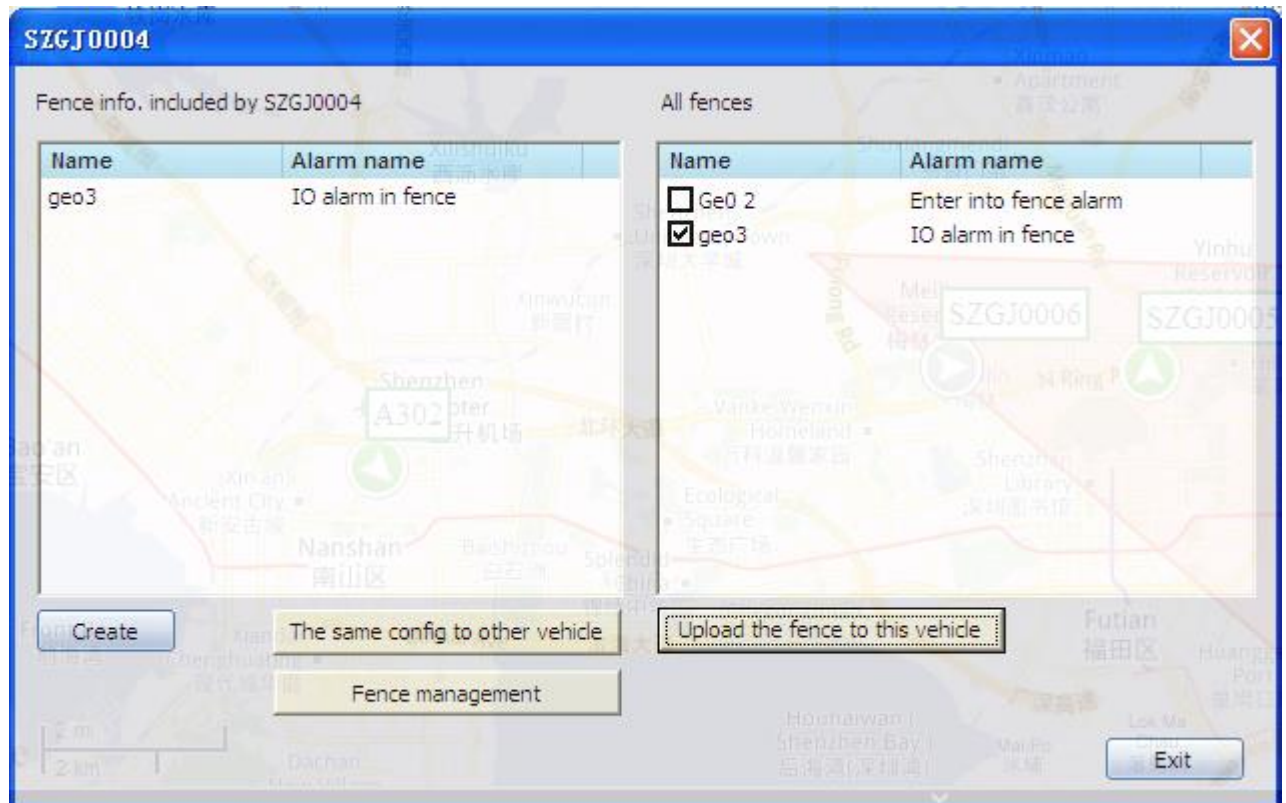


Please enter into the Fence name, choose alarm type, setup alarm name and the trigger time.

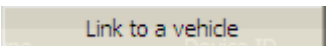


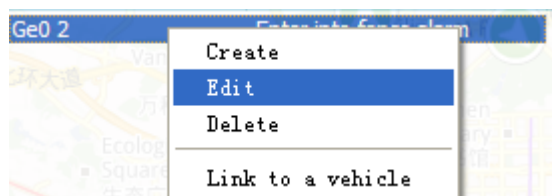


Click on OK button, the fence will be shown on the list.

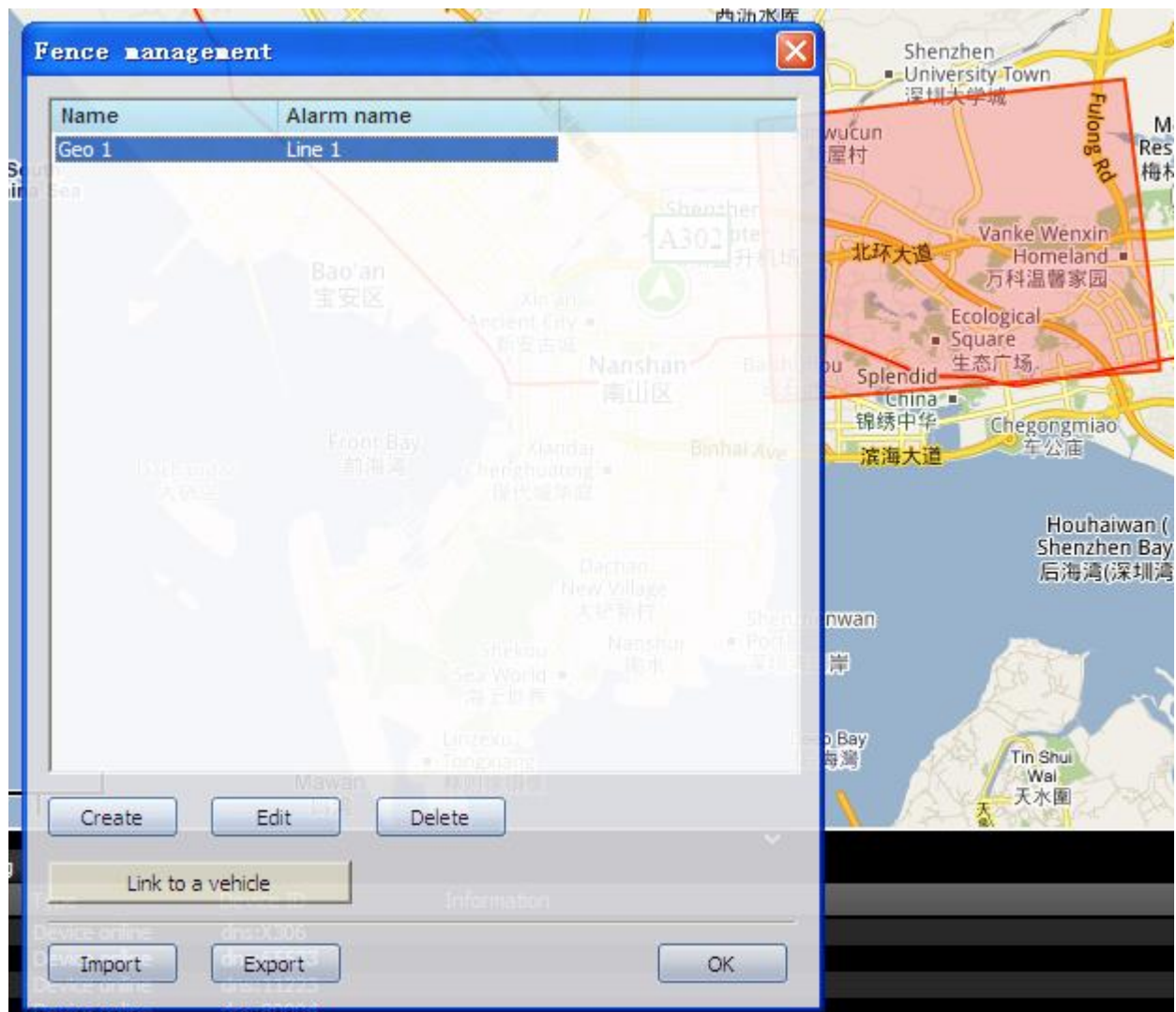


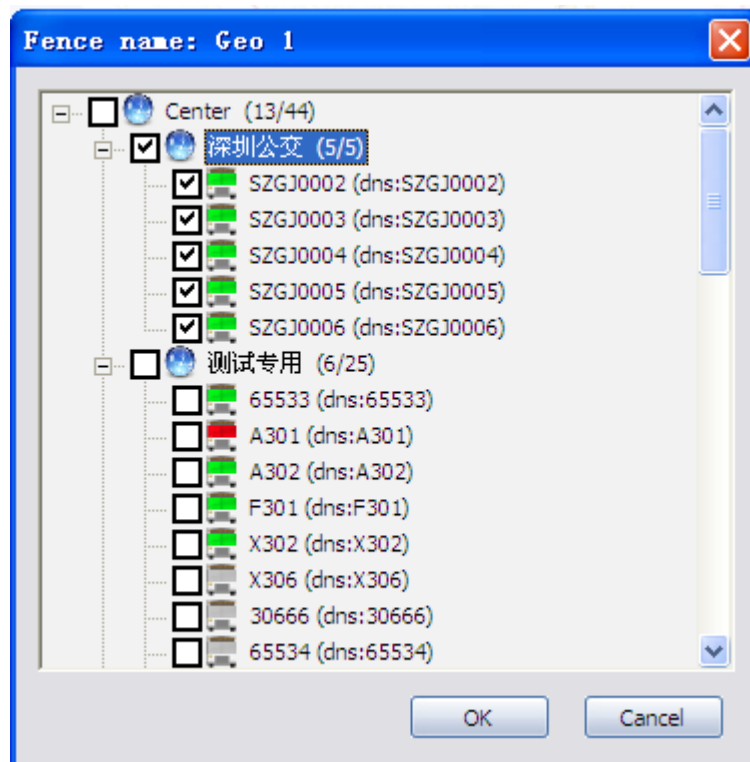
Link to vehicle:

Choose this fence and click on the button  or right click on this fence to setup on the right click menu.



When choose this fence, it will be shown on the map, and then click on Link to a vehicle button, to bind it to vehicles.





Click on OK to finish the setup.

So when the vehicle triggers alarm, it will be shown on the alarm log window as below.

The screenshot displays the ONE TECH CMS interface. A central window lists device alarms with columns for Device ID, Type, and Information. Below this is a 'System log' section with a table of historical events.

Device ID	Type	Information
dns:SZGJ0002	GPS receiver fa...	
dns:SZGJ0002	Alarm Lifting	GPS receiver fault alarm;
dns:A301	Speed alarm	Current speed: 0.36 (0.00 KMH-0.30 KMH) duration: 0
dns:A301	Alarm Lifting	Speed alarm;
dns:A301	Speed alarm	Current speed: 0.36 (0.00 KMH-0.30 KMH) duration: 0
dns:A301	Alarm Lifting	Speed alarm;
dns:A301	Speed alarm	Current speed: 0.34 (0.00 KMH-0.30 KMH) duration: 0
dns:SZGJ0004	GPS receiver fa...	
dns:SZGJ0004	Alarm Lifting	GPS receiver fault alarm;
dns:A301	Alarm Lifting	Speed alarm;
dns:A301	Speed alarm	Current speed: 0.40 (0.00 KMH-0.30 KMH) duration: 0
dns:A301	Alarm Lifting	Speed alarm;
dns:A301	Speed alarm	Current speed: 0.34 (0.00 KMH-0.30 KMH) duration: 10
dns:A301	Alarm Lifting	Speed alarm;
dns:A301	Speed alarm	Current speed: 0.34 (0.00 KMH-0.30 KMH) duration: 0
dns:A301	Alarm Lifting	Speed alarm;
dns:A301	Speed alarm	Current speed: 0.34 (0.00 KMH-0.30 KMH) duration: 23
dns:A301	Alarm Lifting	Speed alarm;
dns:SZGJ0002	GEO fence alar...	Enter into fence alarm Name: Ge0 2;

Time	Plate	Device ID	Type	Information
2009-08-19 23:28:04	A301	dns:A301	Alarm Lifting	Speed alarm;
2009-08-19 23:29:47	A301	dns:A301	Speed alarm	Current speed: 0.34 (0.00 KMH-0.30 KMH) duration: 10
2009-08-19 23:29:59	A301	dns:A301	Alarm Lifting	Speed alarm;
2009-08-19 23:30:56	A301	dns:A301	Speed alarm	Current speed: 0.34 (0.00 KMH-0.30 KMH) duration: 0
2009-08-19 23:31:16	A301	dns:A301	Alarm Lifting	Speed alarm;
2009-08-19 23:31:40	A301	dns:A301	Speed alarm	Current speed: 0.34 (0.00 KMH-0.30 KMH) duration: 23
2009-08-19 23:32:00	A301	dns:A301	Alarm Lifting	Speed alarm;
2011-03-04 10:23:42	SZGJ0002	dns:SZGJ0002	GEO fence alarm(PC)	Enter into fence alarm Name: Ge0 2;

Enter into fence alarm is alarm name.

Ge02 is fence name.

Note: this only gives an alarm log, if you want the CMS to record or play sound, please go to alarm setup in system setup.

Export/Import fence:

This is used to save the fence information, so when you upgrade the CMS, no need to re-create them again.


Choose the fence and click on Export button to save it as a *.areas file. Otherwise, if you click on Export button, it will save all the fences information.

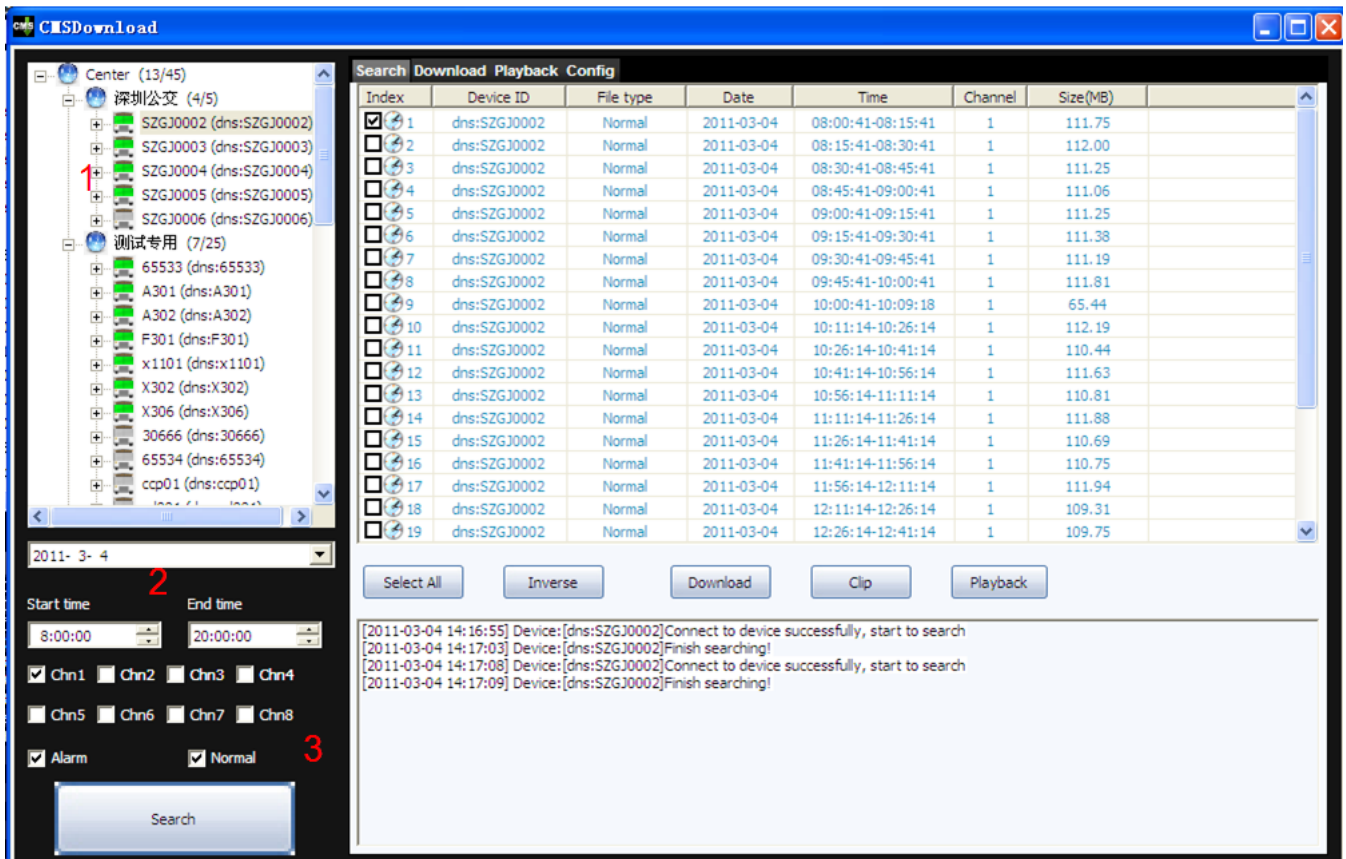
Click on the Import button and choose the .areas file to load the fence.

4.2.9 Download

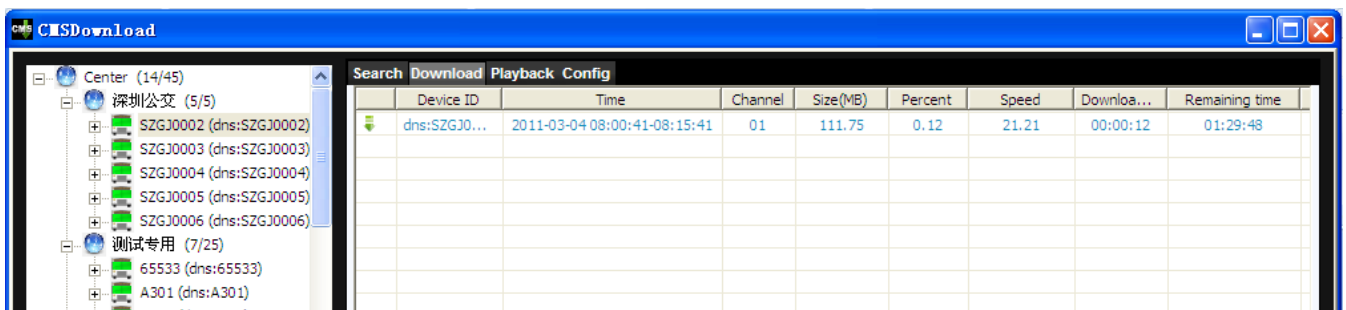
As CMS is mainly used for 3G real-time monitoring, so when you download the whole video file, please take the 3G network and cost into consideration. Also it support remotely clip which can reduce the cost.



Click on the  download icon on right top of the main interface.



First choose an online device, setup the date, time, channel and file type to search. It will list all the files. Then select one and click on download. And click on the download label to check the details information.




If you want to clip part of the file, click on Clip button to setup the start time and end time.

Dialog

Start time: 13:32:00

End time: 13:33:30

OK Cancel

Search	Download	Playback	Config					
	Device ID	Time	Channel	Size(MB)	Percent	Speed	Downloa...	Remaining time
	dns:SZGJ0...	2011-03-04 13:32:00-13:33:30	01	11.39	0.00	0.00	00:00:16	23:59:59

After download the video, you can easily check the video using playback function.

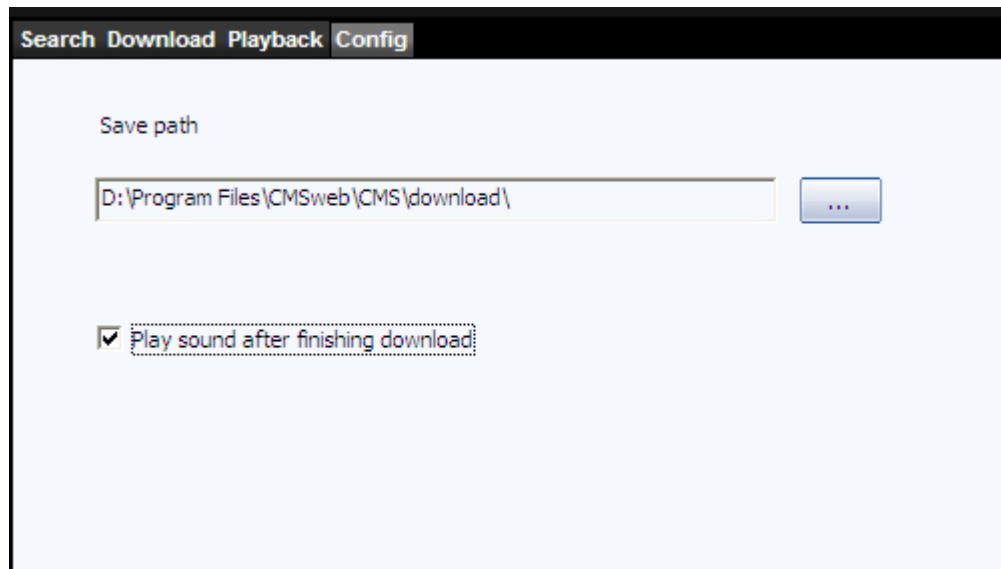
Search Download Playback Config

03/03/2011 08:53:43

80004

Open File Forward Next Pause Stop Slow Fast Speed 1 ☒ Sound

Setup the path: click on config label to setup save path.



4.2.10 System setup

Click the setup icon



on right- top the window to setup the system information.

System:



System setup

System Record Alarm Tv Wall

— Snapshot setup —

☐ Open snapshot in a new window.

Save path D:\Program Files\CMSweb\CMS\SaveImage ...

— Video —

mode Real-time

Cut off the video transmission automatically after this duration

OFF

☐ Enable dual monitor

Register

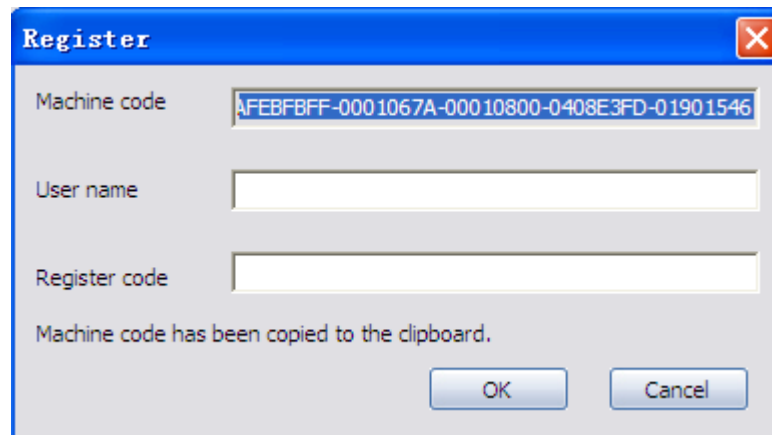
Save Cancel

Snapshot Setup: Please tick Pop-up picture when Screenshot successfully if you want to get the picture when snapshot.

Video mode: real-time or smooth mode

Cut off video: this function is developed to reduce the transmission cost when no one monitors video. It will cut off the video transmission after the setup mins if no one operates.

Register: please copy the machine code and send it to us for registration. We will give you the user name and register code.



Register

Machine code: AFEFBFF-0001067A-00010800-0408E3FD-01901546

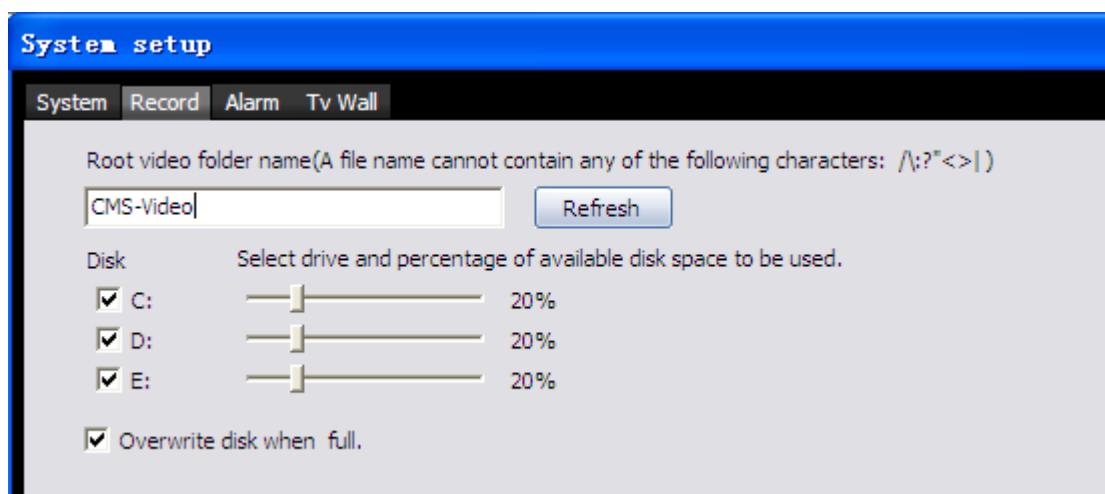
User name:

Register code:

Machine code has been copied to the clipboard.

OK Cancel

Record:



System setup

System Record Alarm Tv Wall

Root video folder name(A file name cannot contain any of the following characters: / \ : ? * < > |)

CMS-Video Refresh

Disk Select drive and percentage of available disk space to be used.

Disk	Select drive and percentage of available disk space to be used.
<input checked="" type="checkbox"/> C:	20%
<input checked="" type="checkbox"/> D:	20%
<input checked="" type="checkbox"/> E:	20%

☒ Overwrite disk when full.

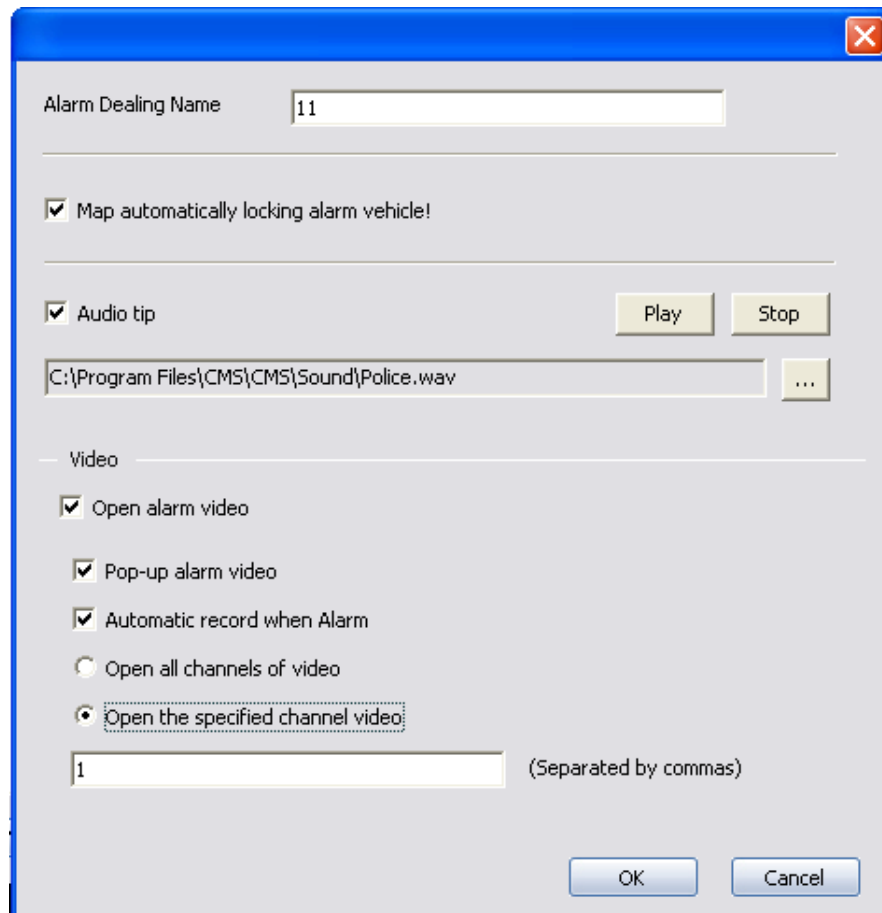
Record Save Path: setup the disk for the local recording, and the alarm recording on CMS. The folder will be in each disk.

Note: This path is used for the local recording function on CMS.

Alarm setup:

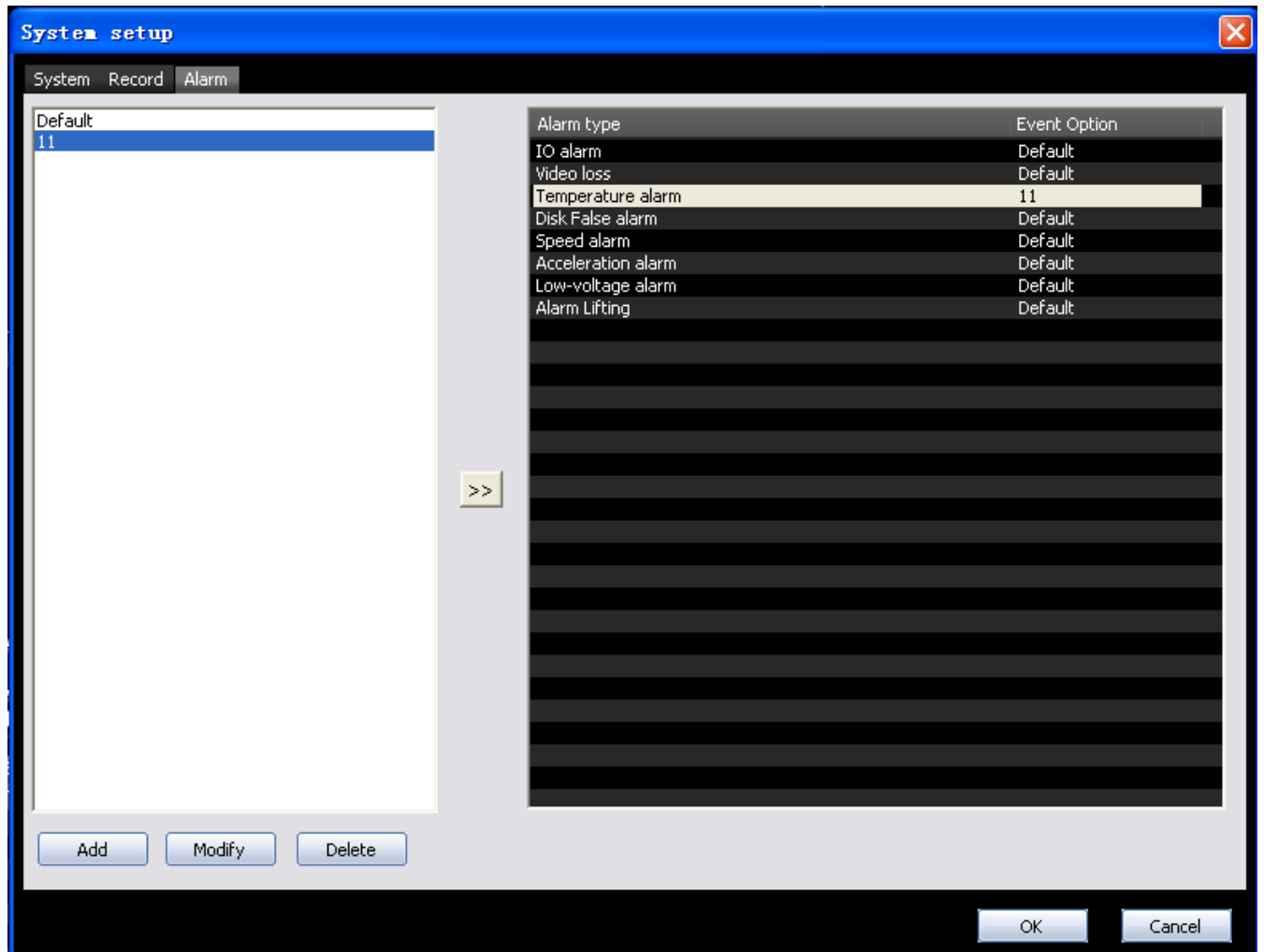
After setup the dealing type for each event here, when the CMS receive the alarm information from the device (alarm information will be shown on the Log window—Alarm Log), it will make a sound, pop-up video window and record video automatically.


www.onetech.us





The screenshot shows a configuration window titled "Alarm Dealing Name" with a text box containing "11". Below this, there are several checkboxes: "Map automatically locking alarm vehicle!" (checked), "Audio tip" (checked), and "Open alarm video" (checked). The "Audio tip" section includes "Play" and "Stop" buttons and a text box containing "C:\Program Files\CMS\CMS\Sound\Police.wav" with a browse button "...". The "Video" section includes "Pop-up alarm video" (checked), "Automatic record when Alarm" (checked), "Open all channels of video" (radio button), and "Open the specified channel video" (radio button). Below the "Open the specified channel video" option is a text box containing "1" and the text "(Separated by commas)". At the bottom right are "OK" and "Cancel" buttons.

After setup the name, audio and video deal type, please click OK to add this type



Click the dealing type in the left and then the alarm type in right, then click  to setup the alarm.

4.2.11 Alarm Info.

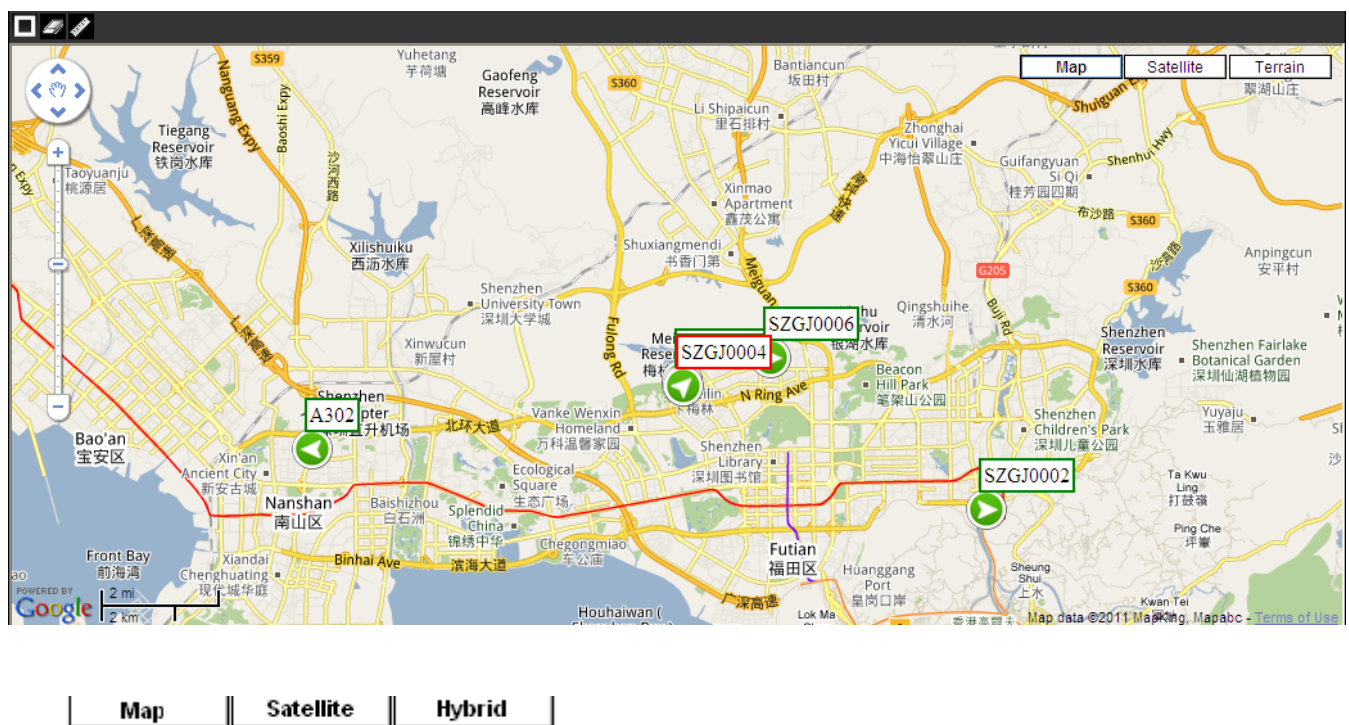
When there is alarm, the green icon  will change to be red . Click red icon to check all the alarm information.

Time	Plate	Device ID	Type	Information
2010-08-19 09:32:59	X301	dns:X301	Acceleration alarm	X Direction: -0.5g
2010-08-19 09:33:01	X301	dns:X301	Alarm Lifting	Acceleration alarm
2010-08-19 09:34:07	X301	dns:X301	Acceleration alarm	X Direction: 5.4g
2010-08-19 09:34:10	X301	dns:X301	Alarm Lifting	Acceleration alarm
2010-08-19 09:34:10	X301	dns:X301	Acceleration alarm	X Direction: -6.5g
2010-08-19 09:34:13	X301	dns:X301	Alarm Lifting	Acceleration alarm
2010-08-19 09:37:49	A301	dns:A301	Speed alarm	Current speed: 36
2010-08-19 09:38:32	A301	dns:A301	Alarm Lifting	Speed alarm;
2010-08-19 09:38:37	A301	dns:A301	Speed alarm	Current speed: 34
2010-08-19 09:38:50	A301	dns:A301	Alarm Lifting	Speed alarm;
2010-08-19 09:39:34	A301	dns:A301	Speed alarm	Current speed: 32
2010-08-19 09:39:46	A301	dns:A301	Alarm Lifting	Speed alarm;
2010-08-19 09:41:21	X303	dns:X303	Speed alarm	Current speed: 9
2010-08-19 09:41:34	X303	dns:X303	Alarm Lifting	Speed alarm;
2010-08-19 09:41:36	X303	dns:X303	Speed alarm	Current speed: 27
2010-08-19 09:41:44	X303	dns:X303	Alarm Lifting	Speed alarm;
2010-08-19 09:41:49	X303	dns:X303	Speed alarm	Current speed: 7
2010-08-19 09:41:57	X303	dns:X303	Alarm Lifting	Speed alarm;
2010-08-19 09:42:02	X303	dns:X303	Speed alarm	Current speed: 40

System setup Clear Cancel

4.2.12 Map

In Map and Video/Map window, the Maximize button can be used.



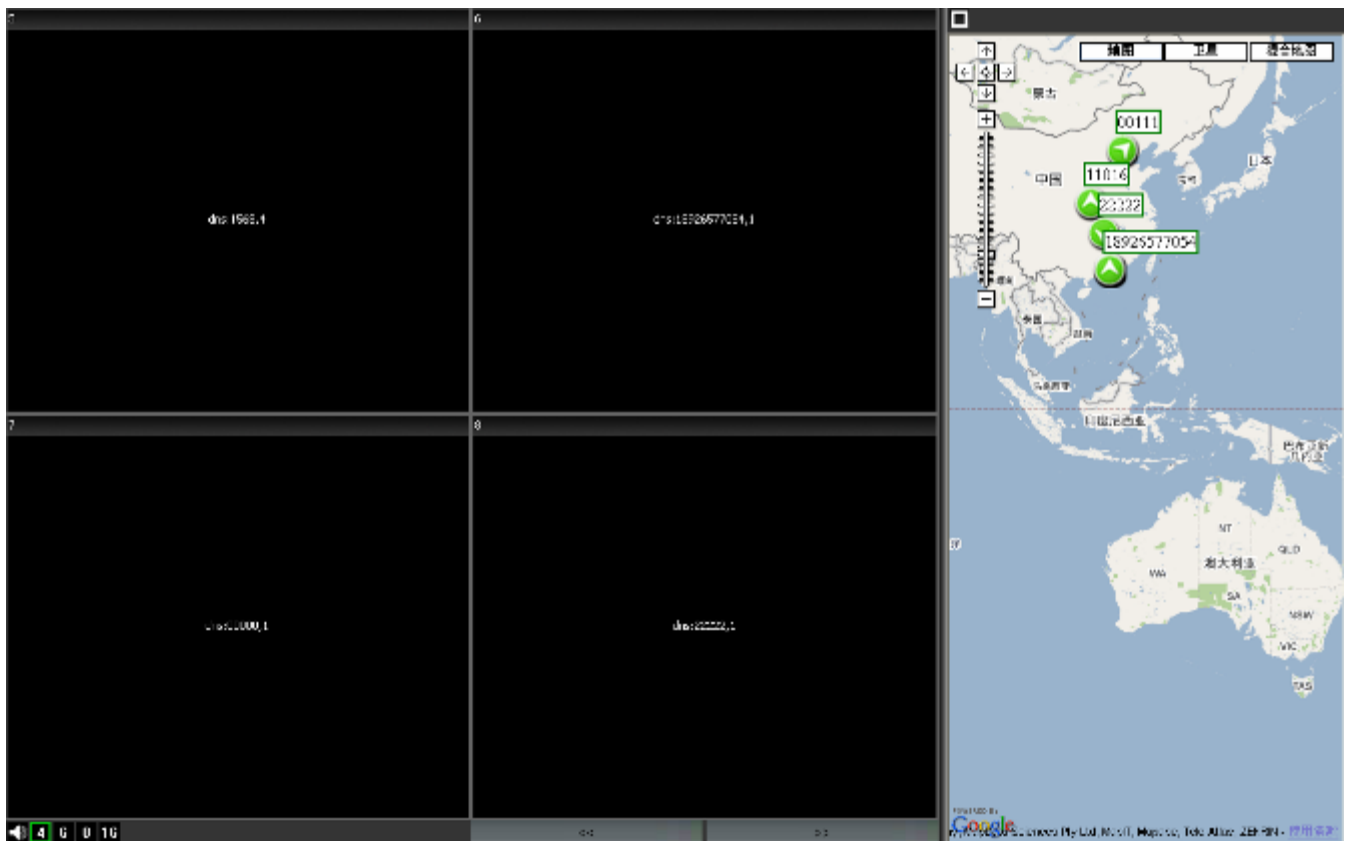


: this one is used to full screen the window

When in Map mode, then if you click this icon, it only full screen the map.



If in Video/Map mode, it will full screen the video and map.



4.2.13 Vehicle online Info.



84: This is the total number of device

12: Currently online number.

GPS 8: the number of vehicle which has GPS info. reported.

4.2.14 Log window

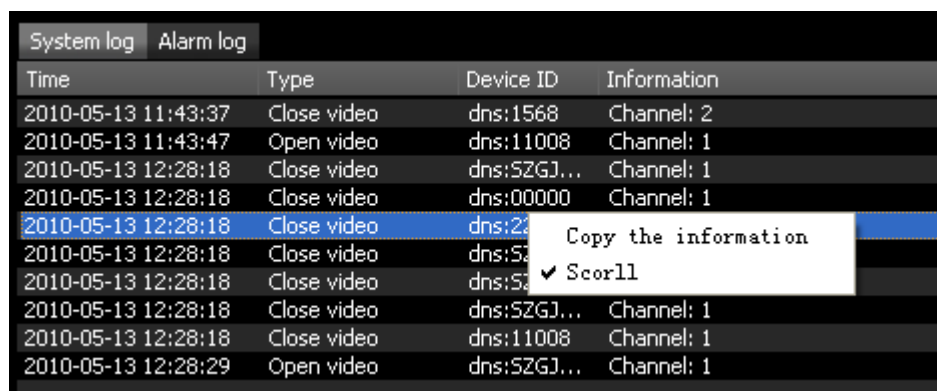
System log		Alarm log	
Time	Type	Device ID	Information
2010-05-07 16:00:52	System operation		System restart successfully! CMS 2.0.0.6B
2010-05-07 16:00:52	Device online	dns:02009	
2010-05-07 16:00:56	Open video	dns:02009	Channel: 1
2010-05-07 16:00:56	Open video	dns:02009	Channel: 2
2010-05-07 16:00:56	Open video	dns:02009	Channel: 3
2010-05-07 16:00:56	Open video	dns:02009	Channel: 4
2010-05-07 16:04:32	Open video	dns:3	Channel: 1
2010-05-07 16:04:52	Device offline	dns:02009	
2010-05-07 16:05:22	Device online	dns:02009	



In this window, you can see all your operation on the system log. And also you can check all the alarm information by click on the **Alarm log** button.

Please note that alarm information here is from the device, whenever the alarm happens, the device will report this to CMS and be shown here. It is different with the alarm filter function in system setup.

Right click on the log window,



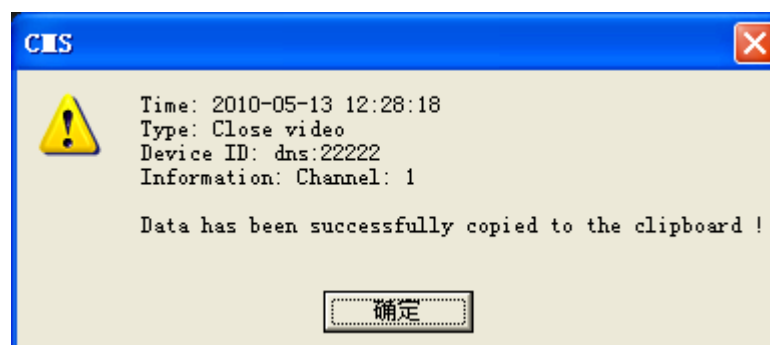
Time	Type	Device ID	Information
2010-05-13 11:43:37	Close video	dns:1568	Channel: 2
2010-05-13 11:43:47	Open video	dns:11008	Channel: 1
2010-05-13 12:28:18	Close video	dns:SZGJ...	Channel: 1
2010-05-13 12:28:18	Close video	dns:00000	Channel: 1
2010-05-13 12:28:18	Close video	dns:22222	Channel: 1
2010-05-13 12:28:18	Close video	dns:SZGJ...	Channel: 1
2010-05-13 12:28:18	Close video	dns:SZGJ...	Channel: 1
2010-05-13 12:28:18	Close video	dns:11008	Channel: 1
2010-05-13 12:28:29	Open video	dns:SZGJ...	Channel: 1

Copy the information

✓ Scroll

Scroll means: when the information is full of the log window, it can scroll down automatically, the latest information is shown on the top.

Copy the information: copy information to paste it to other place.



Then use Ctrl+V to paste the information.

Time: 2010-05-13 12:28:18

Type: Close video

Device ID: dns:SZGJ0002

Information: Channel: 1

When snapshot, it will show you the path, and double click on this path to open the picture.



System log		Alarm log	
Time	Type	Device ID	Information
2011-03-04 14:52:39	Device online	dns:x1101	
2011-03-04 14:58:09	Device offline	dns:A302	
2011-03-04 14:58:27	Open video	dns:SZGJ0002	Channel: 1
2011-03-04 14:58:27	Open video	dns:SZGJ0002	Channel: 2
2011-03-04 14:58:27	Open video	dns:SZGJ0003	Channel: 1
2011-03-04 14:58:27	Open video	dns:SZGJ0003	Channel: 2
2011-03-04 14:58:27	Open video	dns:SZGJ0004	Channel: 1
2011-03-04 14:58:40	Snapshot	dns:SZGJ0003	Snapshot successfully! [D:\Program Files\CMSweb\CMS\SaveImage\SZGJ0003_2_20110...
2011-03-04 14:58:46	Snapshot	dns:SZGJ0003	Snapshot successfully! [D:\Program Files\CMSweb\CMS\SaveImage\SZGJ0003_1_20110...
2011-03-04 14:58:53	Snapshot	dns:SZGJ0003	Snapshot successfully! [D:\Program Files\CMSweb\CMS\SaveImage\SZGJ0003_1_20110...

4.2.15 Basic Info. and PTZ

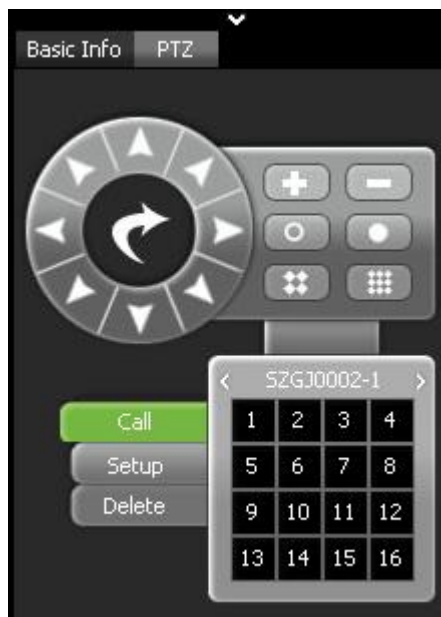
Basic Info.:

Click the online car, it will show you the information as follows:

Basic Info		PTZ	
Plate	szgj0002		
Name	SZGJ0002		
Transmit server	58.60.231.221		
GPS Time	2010-05-12 16:42:28		
Longitude+	114.068180		
Latitude+	22.558303		
Direction	Northwest		
Speed	14		

Click this icon  to hide this part.

PTZ:



Please click the directional button to change the camera direction.



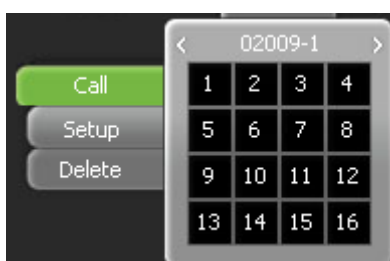
: Zoom in and zoom out.



: Aperture



: Focus



: This is for pre-set and calling position.



5 Case studies

5.1 Introduction

There are two typical cases: the first one need to transmit about 250 channels video all the time, so the PC and network must very good to match this requirement; the second one have 1000 MDVRs, but no need to transmit so many channels concurrently, so it is more easier compared with the first one.

CMS can support 2000 MDVRs at the same time, and it would be a little slow and refreshes every 15~20 seconds.

And if you want to get more channels at the same time, please take the 3G signal strength, bandwidth and PC performance into consideration.

Here I will give you two examples:

(1) Project reference 1: UNINET

In this project, there are 325 vehicles, and almost 250 MDVRs' video need to be checked concurrently.

All the online vehicles report the online, GPS, and alarm information back to CMS message server.

Due to the limitation of the PC memory, 2 transmit servers are required for the video transmission. (4GB memory can transmit less than 200 channels)

Due to the limitation of the 3G bandwidth, it won't be possible for the mass data transmission, our experience with UNINET project (one of the biggest telecommunications operators).

In this project, 30 CMS clients are used for video live view checking. Each client has 16 video windows because of the limitation of the PC graphics card.

(2) Project reference 2: public bus

In this project, 1000 vehicles report GPS, online and alarm information back to CMS message server.

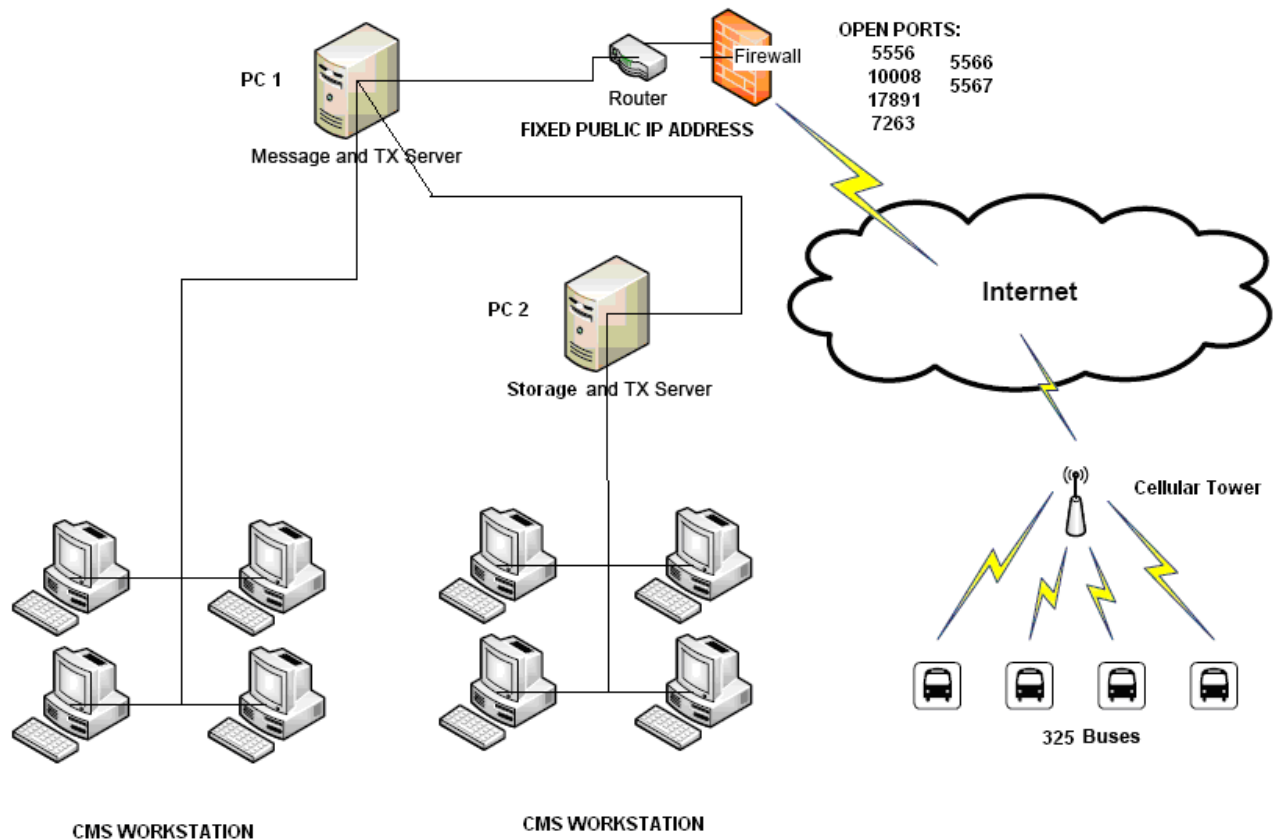
Since there are not as much live video transmission as UNINET project, only one transmit server is required for video transmission and 10 clients for video checking.

Conclusion:

(1) For live viewing, due to the limitation of the PC graphic card, you can only view 16 channels concurrently per PC.

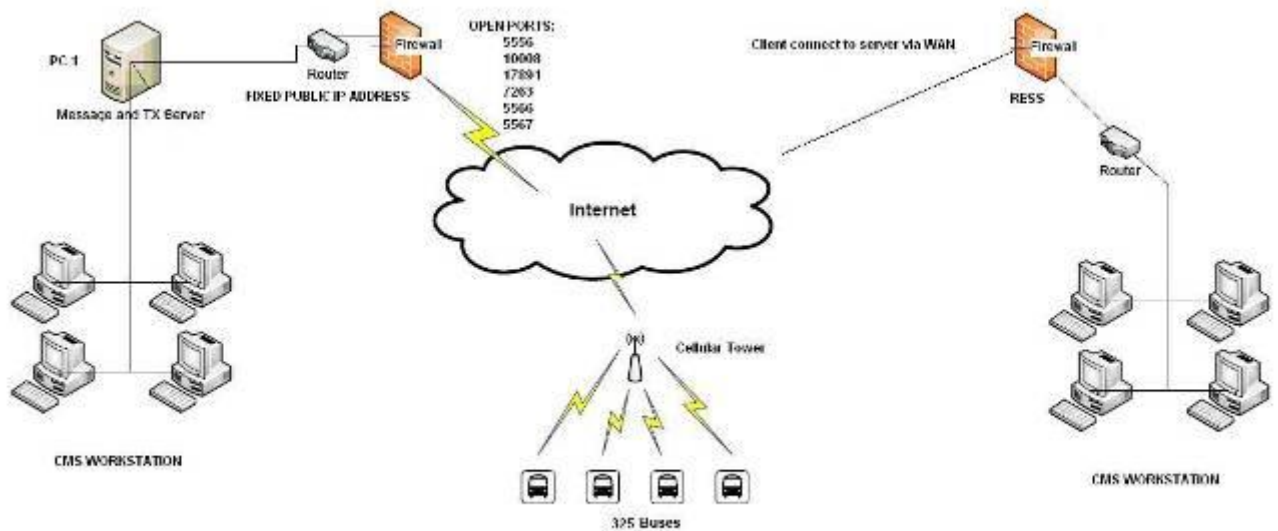
(2) For video transmission, due to the limitation of the PC memory, one PC can transmit less than 200 channels at the same time.

5.2 Network diagram



PC 1 and PC 2 are two servers PC. PC 1 is installed with the message server and transmit server. Message server receive all the 325 vehicle information, transmit server on the PC1 is used to transmit 200 channels. PC2 is installed with the transmit server for the transmission of the other 125 vehicles, and also has storage server for the video storage. There are many clients connect to the server to check video all the time.

The above diagram shows that the client and server works in the same local network. Also the client can connect to server via WAN, diagram as follows:



You can only install the CMS client in a WAN PC, and then connect it to the server to realize monitoring.

5.3 Bandwidth calculate

(1) Video transmission: each vehicle has one channel video transmitted, and the bandwidth is 50Kbps, 325 vehicles.

$$50\text{kbps} * 325 = 16250\text{Kbps} = 15.87\text{Mbps}$$

(2) GPS information: 5 seconds one packet, each packet 200Bytes, 325 vehicles.

$$(325 * 200 \text{ Byte} / 5) * 8 = 101.7\text{kbps} = 0.1\text{Mbps}$$

(3) Command information: like apply for video command, 325 vehicles.

$$2 * ((325 * 256 \text{ Byte}) * 8) = 1300\text{Kbps} = 1.3\text{Mbps}$$

So the totally bandwidth needed is $15.87 + 0.1 + 1.3 = 17.27\text{Mbps}$.