

## Useful Utilities

This chapter discusses some advanced level features and utilities that could help administrator to maximize system performance in a security network.

### Using Dynamic DNS

The Dynamic DNS is an application that allows user to register a domain name that always points to their GV-System. This application is only necessary when your GV-System is using a dynamic IP address. If so the DDNS will update GV-System's IP address to DNS server in every 10 minutes. Therefore, even if your GV-System's IP address changes, you can still locate it by using the registered domain name.

Dynamic DNS supports Windows XP, Windows 2000, and Windows Server 2003 only, it will not support Windows 95/98 or ME.

Dynamic DNS uses port 80 and 81 to upload IP address over the Internet. If your GV-System is connected behind a router or firewall, please make sure port: 80 are open. Dynamic DNS will only upload Global IP addresses. If your GV-System is using virtual IP, NAT port mapping should be done first.

### Installing Dynamic DNS

Insert System CD-ROM into GV-System's CD-ROM drive. Run Setup.exe. Select Register Dynamic IP then click Next. Select Dynamic DNS Service then click Next. Determine whether you want to auto run Dynamic DNS AP at Windows startup then click Next. Follow rest of the installation Wizard to complete.

## Registering Domain Name with DDNS

1. Go to Windows Start, point to Programs, select DDNS, and then run DNS Client.exe to bring up the DNS Client dialog box. Click Register and the following Dynamic DNS register page will appear.
2. Input a username in the Username field. Username can be up to 16 characters. Username will accept "a ~ z", "0~9", and "-", but will not accept space or "-" as the first character.
3. Enter a password in the Password field. Passwords are case-sensitive and must be at least 6 characters. Re-enter the password in the Re-Type password field for confirmation.
4. In the Word verification section, enter the code within the box. In this example, the code you should enter is *N4GN*. Word verification is not case-sensitive.

# DynamicDNS

## Register

Username: Dynamicdns

Password: \*\*\*\*\*

Re-type Password: \*\*\*\*\*

### Username

Username is 16-character maximum; username may not start with spaces or minus signs ('-'). Username will be your hostname.

### Password

The password is case-sensitive.

Enter the characters as they are shown in the box below. N4GN

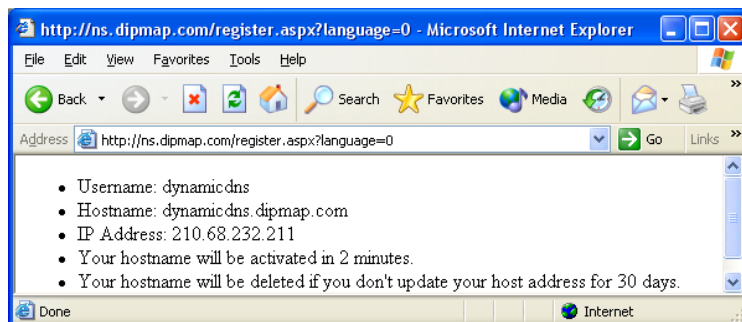


### Word Verification

This step helps us prevent automated registrations.



5. Click the Send button, and the system will display the following message if the registration is completed successfully.



**Username:** The username you registered. In this example the username is “dynamicdns”

**Hostname:** The hostname you created. Hostname is made by registered username and “dipmap.com”. In this example the host name is “http://dynamicdns.dipmap.com”. This will be the domain name you use for login to GV-System.

**IP Address:** Your GV-System’s current IP address. This IP address will be updated every 10 minutes.

In DNS Client interface, enter the registered username and password then press the [Save] button. The system will show the connection information as illustrated below. The DNS Client AP is now activated. However, it will not upload IP address unless one of the following applications is running: the main system, Center V2, VSM, Dispatch Server, Twin DVR, and SMS Server. If the IP address of your GV-System is not updated for more than 30 days, your host name will be deleted automatically.

Enable “Run at startup” if you wish to auto run Dynamic DNS AP on the next Windows start-up.

The screenshot shows the DNSClient application window. It has a title bar with the text 'DNSClient'. Inside the window, there are two text input fields: 'Username:' with the value 'DynamicDNS' and 'Password:' with masked characters. Below these is a checkbox labeled 'Run at startup' which is checked, and a 'Save' button. A 'Register' button is also present. At the bottom, there is a table displaying connection information.

Status	Update succeeded
Hostname	dynamicdns.dipmap.com
IP Address	210.68.232.211
Time	11:27:55

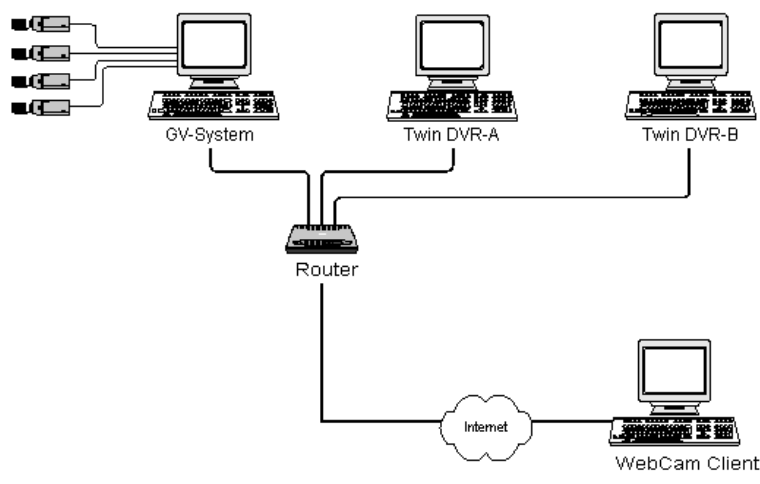
## TwinDVR System

TwinServer is an external application that helps sharing the networking liability from the GV-System. A complete TwinServer concept will require at least two computers: a TwinServer, which should be run on the computer where GV-System is installed, and TwinDVR, which should be run on a separated computer connected to the same LAN as the TwinServer. The TwinServer sends video stream to TwinDVR, while TwinDVR act as a WebCam Server and serves all WebCam clients over the Internet. One TwinDVR is good for serving approximately 100 WebCam clients over the Internet. Multiple TwinDVRs can be added to the network as online traffic increases.

There are two ways to connect TwinServer and TwinDVR: TCP/IP mode and Multicast mode. Both have its advantage and disadvantage; choose the one that suits your application mostly.

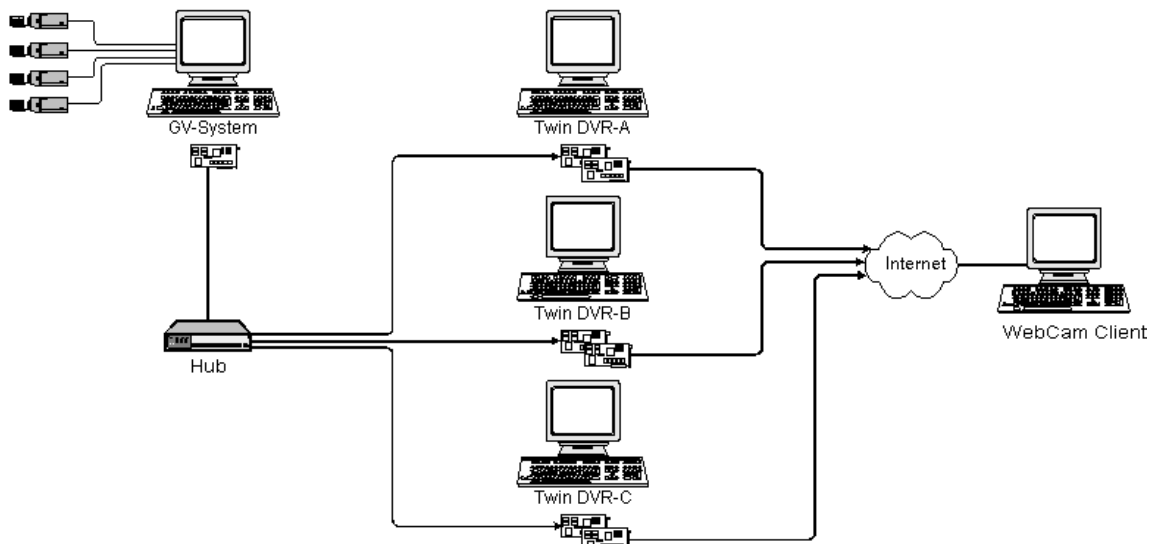
### [TCP/IP]

TCP/IP is a more simpler and cost effective solution. In TCP/IP mode, the TwinServer and TwinDVRs are connected in a point-to-point connection. Meaning the video streams are being sent from TwinServer to TwinDVR-A, then TwinDVR-A duplicates the video streams and sends it to TwinDVR-B. If connection between TwinServer and TwinDVR-A is broken, TwinDVR-B will not be able to receive video streams as well.



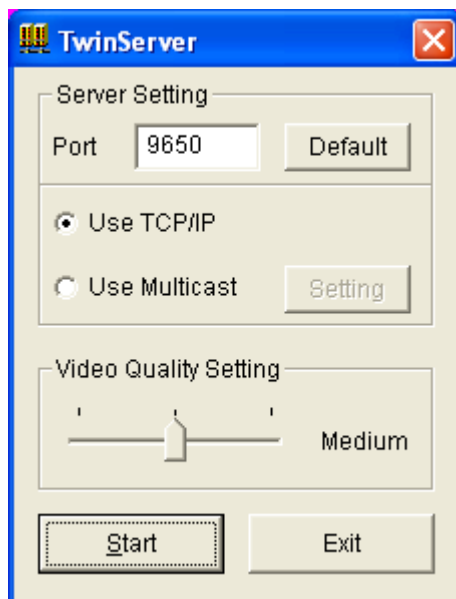
### [MultiCast Mode]

Multicast Network is more complicated and expensive to setup. In Multicast mode the TwinServer will transmit video streams in packets to a virtual buffer of the Multicast network. The virtual buffer then broadcasting the video streams over to all TwinDVRs under the network. Each TwinDVR should install with two network cards. One to the hub where TwinServer is plugged and the other to a DSL or ISDN modem with dedicated ISP service to the Internet. Each TwinDVR will be serving its own group of WebCam Clients.



## Twin Server Setup

Click the Network button in main system screen, select TwinServer from the menu and the TwinServer setup dialog box will appear.



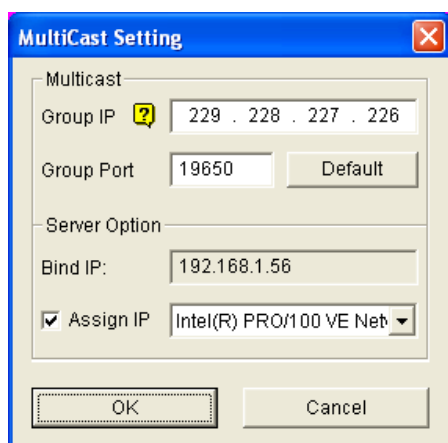
**Figure 13-1** TwinServer Setup

TwinServer uses Port: 9650 for video transmission, It is recommended to leave port configuration in default unless otherwise necessary. In the next section select the type of network to be used. Choose the one most suitable to your application. If Multicast is selected, click the setting button will bring up Multicast Setting dialog box. Use the Video Quality Setting slider to adjust video quality between Low, Med, and High.

## Multicast Settings

The Group IP field displays the IP address for the virtual buffer that stores the video streams in Multicast network. Group Port is the port number used for transferring video streams over the Multicast network. It is recommended to leave both configuration in default unless otherwise necessary.

Server Option setting is only necessary if your GV-System is installed with more than one network card. Enable Assign IP and select the network card to be used in the drop-down list. The IP address of the selected network card will be displayed in the Bind IP column.



After properly setup the above steps you may press the [Start] button in “TwinServer” window to activate TwinServer.

## TwinDVR Installation and Setup

The TwinDVR is included in your GV-System CD-ROM. This application should be installed in a separate PC within the same Local Area Network as the TwinServer. Please make sure your PC meets the minimum system requirement indicated below before proceeding further.

OS:	Win 2000, XP, Server2003
CPU:	Pentium4 2.0GHz (minimum)
Memory:	256 MB RAM
Hard Disk:	40 GB (minimum)
VGA:	NVIDIA GeForce II 32MB
Network:	TCP/IP

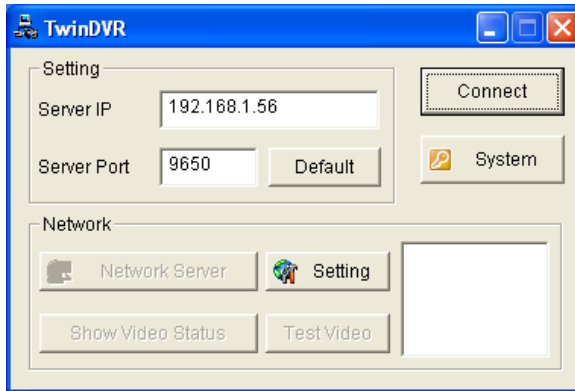
## Installing TwinDVR

Insert System CD-ROM into CD-ROM drive of the computer where TwinDVR will be installed. Run Setup.exe. Select TwinDVR system then click Next then follow the rest of the installation wizard to complete the installation. During the installation, you maybe prompted to install GeoMPEG4 codec,

simply press Yes.

## Running TwinDVR

Go to “Windows / Start / Program / TwinDVR /” then run TwinDVR.exe. This will bring up the TwinDVR dialog box as shown below.



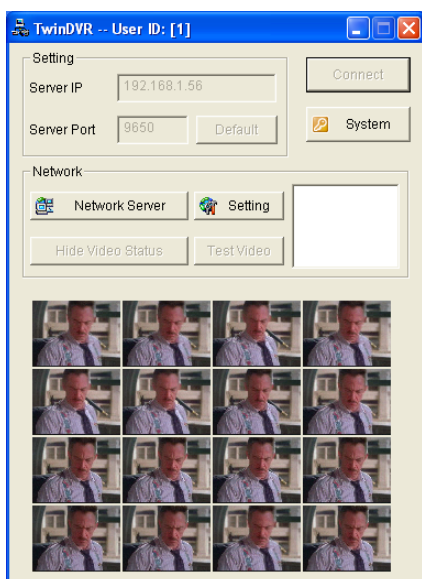
**Figure 13-2** TwinDVR Setup

## Connecting TwinDVR to TwinServer

Input TwinServer’s IP address in the Server IP field. Leave Server Port in default at 9650 unless you’ve changed the port configuration in TwinServer setup dialog box (see figure 13-1). Click the Connect button and you will be prompted for User ID and Password. Provide valid ID and passwords then click the OK button to establish connection. If connect successfully, the Network Server, Show Video Status, and Test Video buttons in figure 13-2 will be unlocked. You can now use them to setup TwinDVR.

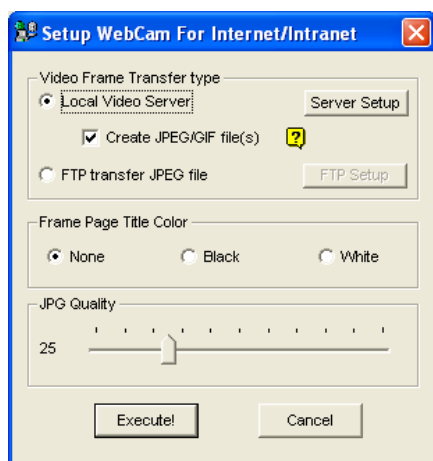
## Video Stream Testing

This function allows you to test the video transmission between TwinServer and TwinDVR. Click the Show Video Status button to bring up 16 monitoring windows displayed beneath the TwinDVR dialog box. Click the Test Video button and video streams from the connected TwinServer will be streamed to the monitoring windows for 10 seconds. You may click the Hide Video Status button to close the monitoring windows.



## Running WebCam Server at TwinDVR

Click the Network Server Button, select WebCam server from the menu, and the following dialog box will appear. Click the Execute button to establish connection to the Internet. If connect successfully, the TwinDVR will be ready to serve WebCam clients over the Internet.



## Setting Multiple TwinDVRs in TCP/IP Mode

Click the Network Server button and select Extended Server from the menu. The Extended Server is now running in TwinDVR and should be displayed in the Server Status Window. The main purpose of Extended Server is to duplicate TwinServer's video stream and transmit it to the next TwinDVR of the network. If you are connecting five TwinDVR in the network, TwinDVR 1, 2, 3, and 4 should have Extended Server activated, TwinDVR 5 will not require since there are no more TwinDVR running behind it.

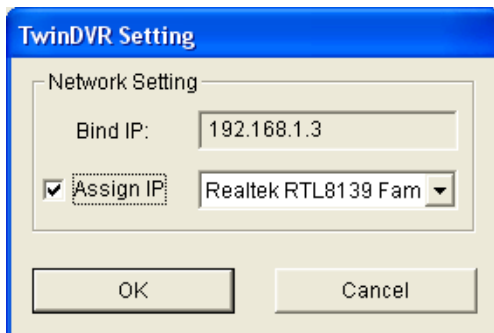


## Setting Multiple TwinDVRs in Multicast Mode

Click the Network Server button and select Use Multicast Mode from the menu. The Multicast mode is now activated. The purpose of Multicast Server is to instruct TwinDVR to obtain video streams from the virtual buffer. If there are five TwinDVRs connected to the network, all TwinDVRs will be required to select Use Multicast Mode option.

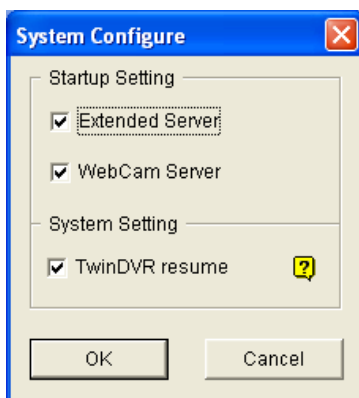
## Network Card Settings

Click the Setting button then select Network Setting from the menu to bring up the following dialog box. This option is necessary when Multicast Network type is in used. Enabled Assign IP option and use the drop-down list to select network card. The IP of the selected card will be displayed in Bind IP column. This will be the network card used for connecting to TwinServer; the other network card will be automatically assigned for connecting to the Internet.



## Startup Settings

Click the Setting button then select System Configure from the menu to bring up the following dialog box.



### [Startup Setting]

- **Extended Server:** Enable this function to activate Extended Server on TwinDVR startup.
- **WebCam Server:** Enable this function to activate WebCam Server on TwinDVR startup.

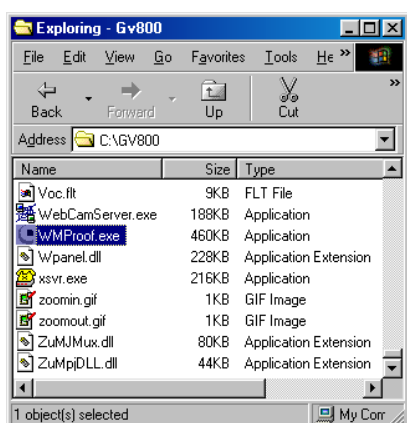
### [System Setting]

- **TwinDVR resume:** Enable this function to resume TwinDVR when system shutdown unexpectedly.

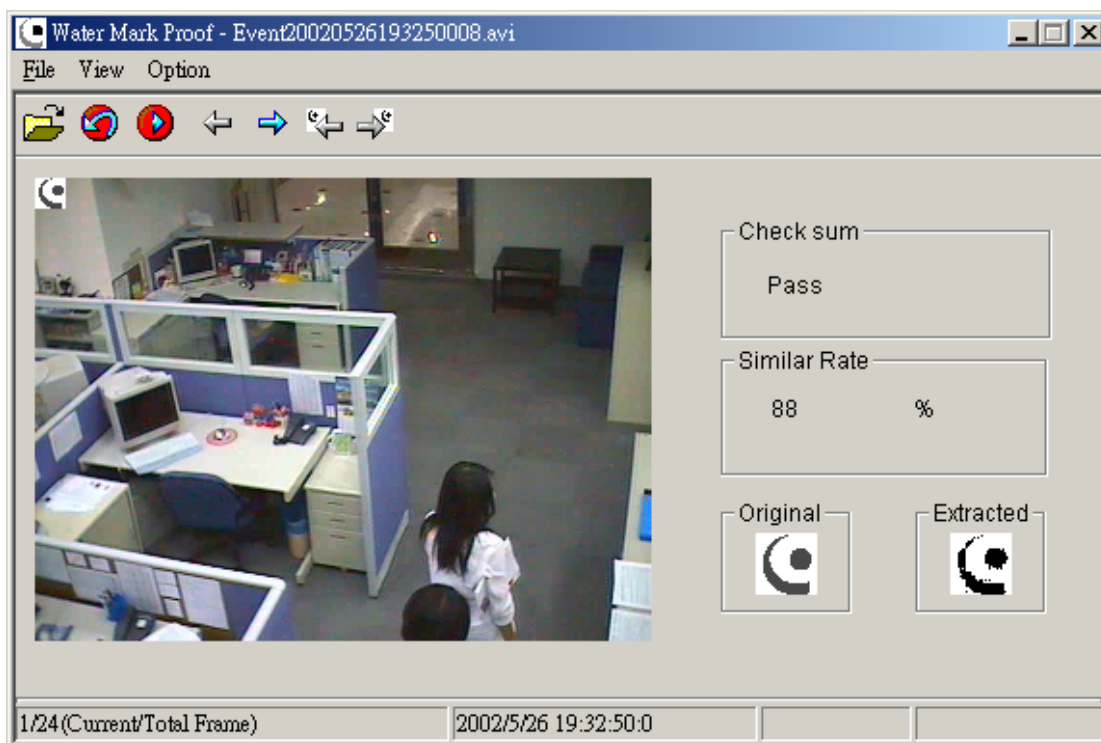
## Watermark Viewer

GV system offers a highly secure solution to protect digital images and video against unauthorized alteration or manipulation. To add watermark to a video stream, click the Configure button and then select Use Digital Watermark Protection, available in the General Setting tab. This allows all recorded video stream be marked with permanent and inseparable image. Since the watermark is invisible to the naked eye, in order to see it the video stream must be open in a watermarking verification program.








The program comes with installation of the GV system. Go to system folder and find WMProof.exe as shown:



Double click to open the program. This opens the Watermark Viewer, shown as follows:



Following table explains functions of each icon:

	Name	Description
	Open File	Click and find a video file to play.
	First Frame	Go the first frame of the file.
	Play	Play the file.
	Previous Frame	Go to the previous frame of the file.
	Next Frame	Go to the next frame of the file.
	Previous Watermarked Frame	Go to the previous frame that contains watermark.
	Next Watermarked Frame	Go to the next frame that contains watermark.

The Watermark Viewer displays the verifying result as follows:

**Check sum:** If the video stream has not been tampered with, the Check sum displays a Pass message. Otherwise a No Pass message will be displayed.

**Original vs. Extracted:** The Extracted section should have the same icon displayed as the one in the Original section. If not it indicates the video may have been altered.

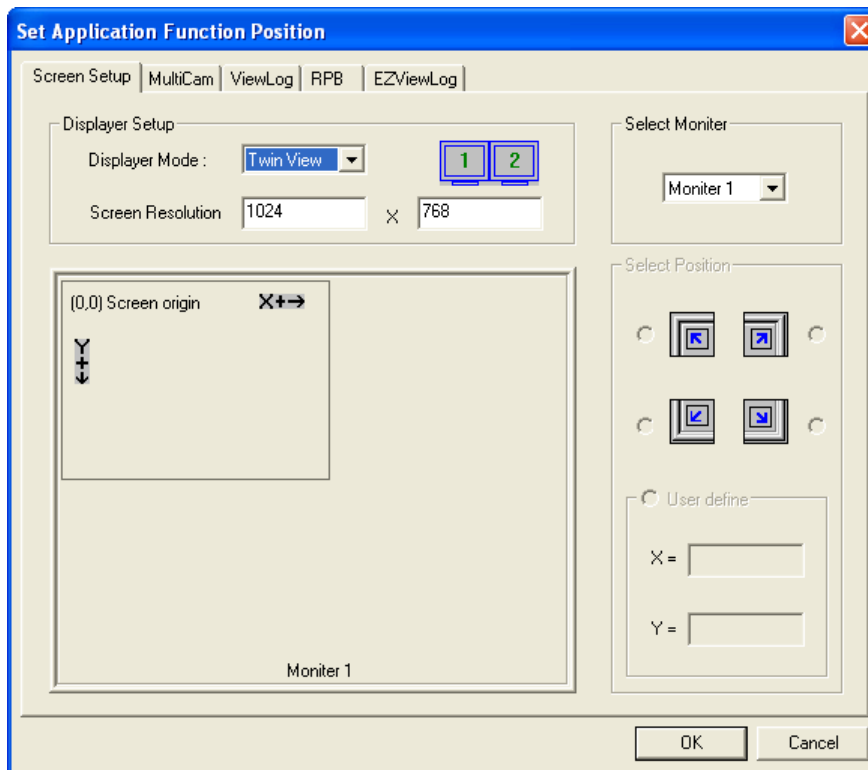
## Using GV-System in Twin View Display

It is possible to display Main System and View Log in two separated monitors. To make this operation possible, your system must equip with VGA card with dual video outputs. Each output should be connected to its own monitor display.

1. Right mouse click on the Windows desktop, select Properties from the menu, and the Display Property dialog box will display.
2. Select Settings, Enable Extend my Windows desktop onto this Monitor, then click the Apply button.



3. Run `c://GV-600/DMPOS.exe` (ex. your system is GV-600) to bring up Set Application Function Position window as shown below.



4. Select “Screen Setup” and choose TwinView in Displayer Mode drop-down list.
5. Select MultiCam, and choose Monitor 1 in Select Monitor drop-down list.
6. Select ViewLog, and choose Monitor 2 in Select Monitor drop-down list.
7. Click the OK button, start GV-System software, which should be displayed in monitor 1.
8. Click the View Log button on the main panel, select video log from the menu; View Log should now be displayed in monitor 2.

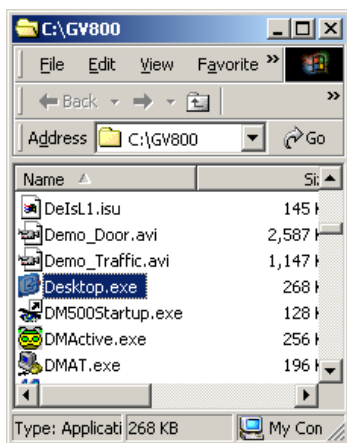
**Note:** The Select Position option allows you to determine where to position GV software on Windows. It is only necessary if your GV-System is set at 800x600 panel resolution but your Windows desktop is set at 1024x768 or higher. It is recommended that both GV software and Windows desktop to be set at the same resolution. You may refer to *Panel Resolution* on page 17 for details on how to set the resolution for GV-System.

## Windows Lockup

Secure your PC while away from your workstation. With this feature, you may lock up the Windows desktop while launching a customized GV-desktop. The GV-desktop is where operators are limited to run the GV-system and the selected programs.

### The GV-desktop Screen

The GV-desktop program is included in the installation of GV-system. Go to the system folder and execute Desktop.exe.



The following GV-desktop screen will appear.



The controls in the GV-desktop screen:

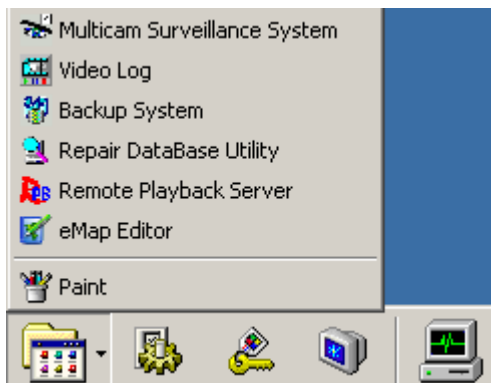
Icon Name	Description
1 Programs	Click to access programs.
2 Settings	Click to add programs to the programs menu.
3 Log Off	Click to log off GV-desktop.
4 Shut Down	Click to shut down the computer.
5 Task Manager	Click to view the tasks currently running on your computer.

## GV-desktop Features

The five buttons on GV-desktop are discussed below.

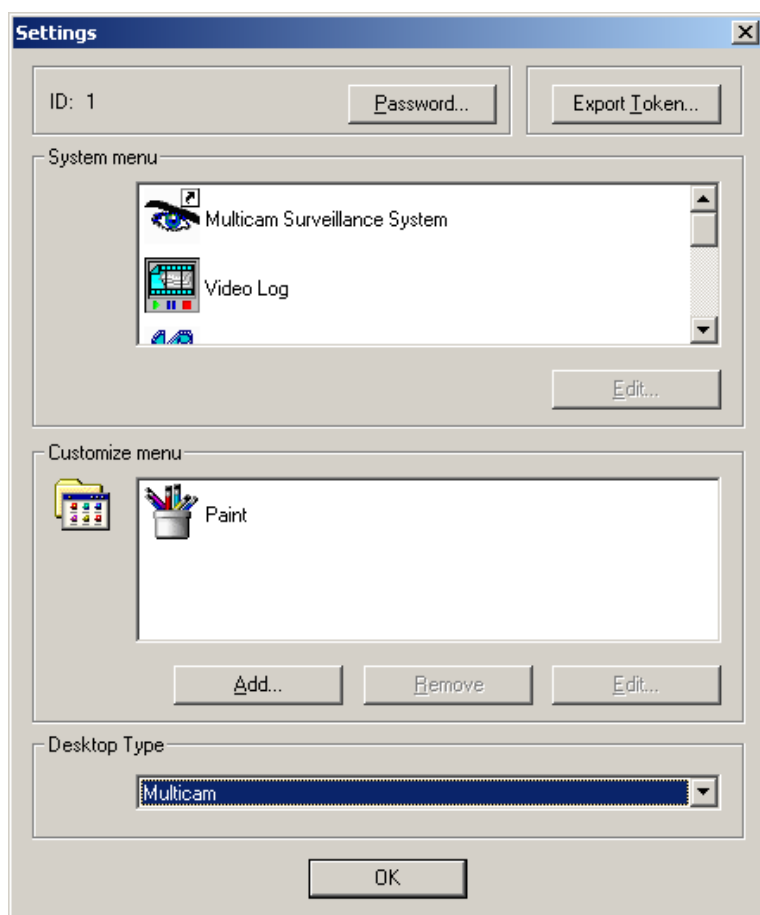
### Programs

Click the Programs button to see the program menu. The default programs are Multicam Surveillance System (Main System), ViewLog, Backup System, Repair Database Utility, Remote Playback Server, and eMap Editor. You can add or remove new programs to the menu. For the illustration below, Paint is a new program added to the menu.



### Settings

Click the Settings button to display the following window. A valid ID and password will be required.



**Figure 13-3** Settings

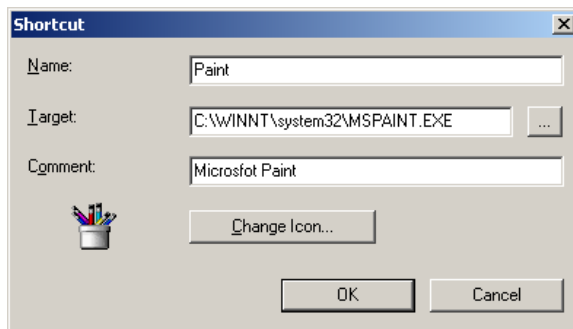
**[Password]** Click to change the password. For the option of Allow Removing Password System, refer to *Setting up Password* in Chapter 2 on page 40.

**[Export Token]** This option is discussed later in the *Token File for Save Mode* section.

**[System Menu]** The menu lets you rename system programs. Select a desired program and click the Edit button to change its name.

**[Customized Menu]** The menu lets you add other programs to the Programs menu. Click the Add button to display the following window. In the Target field, type a path or click the button next to the field to assign a path. Then enter the program name, comment, or even change an icon for the program. Finally, click OK to add the program.





**[Desktop Type]** Select Windows or GV-desktop (Multicam) from the drop-down menu. The selected desktop will launch the next time when you log in to PC.

## Log Off

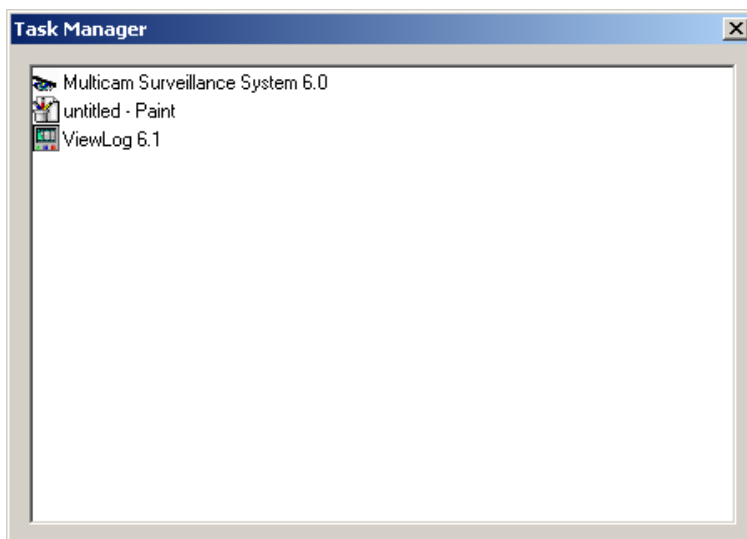
Click the Log off button to log off GV-desktop. A valid ID and password will be required.

## Shut Down

Click the Shut Down button to shut down your computer. A valid ID and password will be required.

## Task Manager

Click the Task Manager button to view the programs currently running on your computer. When you minimize a program, it will be hiding and working in the background. Double click the program listed in Task Manger to bring the program back to desktop.



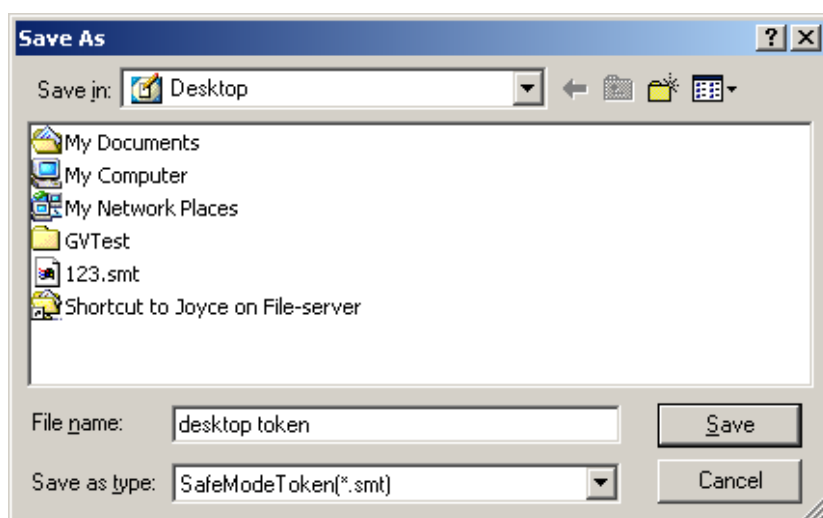
## Token File for Save Mode

This option in the Settings section lets you export a token file. In case you enter safe mode and are in the status of the GV-desktop. This token file will let you exit from the GV-desktop and enter the Windows desktop. To export a token file and apply it, follow the steps below.

1. Click the Export Token button to display the following dialog box.



2. Enter a code in the Token Code field.
3. Click OK to display the Save As dialog box.



4. Locate a path, and enter a desired name in the File Name field.
5. Click Save to save the file.

When you enter safe mode and are in the status of the GV-desktop:

6. Click the Settings button on the desktop. You will be prompted to locate the stored token file and enter the set token code.
7. When the Settings window appears (see figure13-3), select Windows in the Desktop Type field, and then exit from the window.
8. Click the Log Off button to log off the GV-desktop and enter the Windows desktop. The token code and file are also required here.