

GV-Tower System V2

User's Manual





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User's Manual for GV-Tower System V2

Welcome to the GV-Tower DVR/NVR/VMS System V2 User's Manual.

The Manual provides an overview of the GV-Tower DVR/NVR/VMS System V2 and its accessories. It also includes the instructions to guide you through the installation and use of the GV-Tower DVR/NVR/VMS System V2:

- **Chapter 1, Introduction**
Identifies the accessories and options of GV-Tower DVR/NVR/VMS System V2.
- **Chapter 2, Overview**
Identifies the components of GV-Tower DVR/NVR/VMS System V2.
- **Chapter 3, Getting Started**
Provides step-by-step instructions on setting up the GV-Tower DVR/NVR/VMS System V2.
- **Chapter 4, System Health Analysis**
Introduces how to collect data to obtain the service of GV-Tower DVR/NVR/VMS System V2 health analysis from GeoVision.
- **Chapter 5, Troubleshooting**
Suggests courses of action if the GV-Tower DVR/NVR/VMS System V2 doesn't seem to be working properly.

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Safety Instructions



Observe these safety instructions to help ensure against injury to yourself and damage to the product.

- **Read** all safety and installation instructions before you operate the product.
- **Do not operate** the product in high humidity areas or expose it to water or moisture.
- **Do not put** the product in an unstable, a slanting or vibrated place.
- **Do not block** any ventilation opening.
- **Do not install** the product near any heat sources such as radiator, heat register or other apparatus that produce heat.
- **Operate** the product using only the type of power source indicated on the marking label.
- **Do not defeat** the safety purpose of the grounding-type plug. A grounding plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- **Do not overload** wall outlets or extension cords, as this may cause fire or electric shock.
- **Do not use** the product when abnormality occurs, such as emitting smoke from the product, smelling burning, being damaged by drop, invasion of foreign objects inside the product, etc. Be always sure to remove the AC adaptor at once and contact your dealer.
- **Do not use** accessories or attachments not recommended by the manufacturer, as they may cause hazards and void the warranty.
- **Do not attempt** to service the product yourself, as removing the casing may expose you to dangerous voltage and void the warranty.

Chapter 1 Introduction

1.1 Features

- Powered by Intel Core i3 or i5 Processor
- 64-bit Windows Embedded OS
- Support for GPU Decoding
- 4-bay hot swap data HDD
- Maximum storage capacity of 24 TB
- Pre-installed SSD for recovery
- Dual Gigabit LAN ports
- 3 monitor display (VGA, DVI-D and HDMI outputs)
- Support for 3rd party IP devices
- Support for 32-channel GV-DVR/NVR/VMS
- All-in-one solution (Live View, Playback, Recording, Backup, CMS)
- Video analysis (Advanced Motion Detection, Privacy Mask, Scene Change Detection and Counter)
- Fisheye camera dewarping function
- Automatic connection to GV-IP devices
- H.265 / H.264 / MJPEG / MPEG4
- On-screen LED panel for HDD status
- Smart device access
- Multiple languages

1.2 Model

The GV-Tower DVR/NVR/VMS System V2 has the following models:

GV-Tower DVR System V2	<ul style="list-style-type: none">- 16-channel hardware compression plus 16-channel digital video recorder- 16-channel hardware compression: Records up to 480 (NTSC) / 400 (PAL) fps at D1 resolution
GV-Tower NVR System V2	<ul style="list-style-type: none">- 32-channel digital video recorder- 32-channel of free GeoVision IP devices, or 32-channel combination of GeoVision IP devices and third-party IP devices digital video recorder
GV-Tower VMS System V2	<ul style="list-style-type: none">- 32-channel digital video recorder- 32-channel of free GeoVision IP devices, or 32-channel combination of GeoVision IP devices and third-party IP devices digital video recorder

1.3 Software License

1.3.1 GV-Tower DVR/NVR System V2

Free License	32 channels from GV-IP devices
Maximum License	32 channels from third-party IP devices
Increment for Each License	1 to 32 third-party IP cameras in increments of 2
Optional Combinations	N/A
Dongle Type	Internal
Note: The Maximum License is a paid service.	

1.3.2 GV-Tower VMS System V2

Free License	32 channels from GV-IP devices
Maximum License	32 channels from 3 rd -party IP devices
Increment for Each License	3 rd -party IP cameras, in increments of 1 channel
Optional Combinations	N/A
Dongle Type	Internal
Note: The Maximum License is a paid service.	

1.4 Packing List

The GV-Tower DVR/NVR/VMS System V2 package includes the following items. If any of the items are missing or damaged, contact your dealer to arrange a replacement.

Important: Please keep the original carton and all packing materials for future shipping need.

1.4.1 GV-Tower DVR/NVR System V2

1. GV-Tower DVR/NVR System V2 x 1
2. LFH Audio and Video Cable x 1 (only for GV-Tower DVR System V2)



3. Keys for Dard Disk Safety Lock x 2
4. Hard Disk Drive Screw x 16



5. GV-IR Remote Control x 1



6. GV-IR Remote Control Receiver x 1



7. AC Power Cord x 1



8. GV-Tower System V2 Quick Start Guide x 1

1.4.2 GV-Tower VMS System V2

1. GV-Tower VMS System V2 x 1
2. Key for Hard Disk Safety Lock x 2
3. Hard Disk Drive Screw x 16



4. GV-IR Remote Control x 1



5. GV-IR Remote Control Receiver x 1



6. AC Power Cord x 1



7. GV-Tower System V2 Quick Start Guide x 1

1.5 Recommended Hard Drive

For system efficiency, we recommend the following enterprise level hard disk drives. Avoid using desktop level or green HDD which may affect system efficiency.

- WD RE series
- Seagate Constellation ES.3 series
- HGST Ultrastar series

1.6 Options

Optional devices can expand the capabilities and versatility of your GV-Tower DVR/NVR/VMS System V2. Contact your dealer for more information.

GV-Data Capture V3 Box	GV-Data Capture V3 Box can integrate the GV-Tower DVR/NVR System V2 to an electronic POS system, while GV-Data Capture V3E Box can establish such integration through LAN or Internet. **This device is not supported by GV-Tower VMS System V2.
GV-Hub V2	An easy way for serial port extension. This hub can add 4 RS-232/RS-485 serial ports through the USB port of the GV-Tower DVR/NVR/VMS System V2.
GV-COM V2	This unit can add 1 RS-232/RS-485 serial port through the USB port of the GV-Tower DVR/NVR/VMS System V2 .
GV-COM V3	This unit can add 1 RS-485 port to your computer through a USB connector.
GV-IO Box (4 Ports)	GV-IO Box 4 provides 4 inputs and 4 relay outputs, and supports both DC and AC output voltages. A USB port is also provided for PC connection.
GV-IO Box (8 Ports)	GV-IO Box 8 provides 8 inputs and 8 relay outputs, and supports both DC and AC output voltages. A USB port is also provided for PC connection.
GV-IO Box (16 Ports)	GV-IO Box 16 provides 16 inputs and 16 relay outputs, and supports both DC and AC output voltages. A USB port is also provided for PC connection.
GV-Joystick V2	GV-Joystick V2 facilitates the PTZ camera control. It can be either plugged into the GV-Tower DVR/NVR/VMS System V2 for independent use or connected to GV-Keyboard to empower the operation.
GV-Keyboard V3	The GV-Keyboard V3 is designed to program and operate the system, and it can also be connected with PTZ cameras directly for PTZ control.

Chapter 2 Overview

2.1 Front View

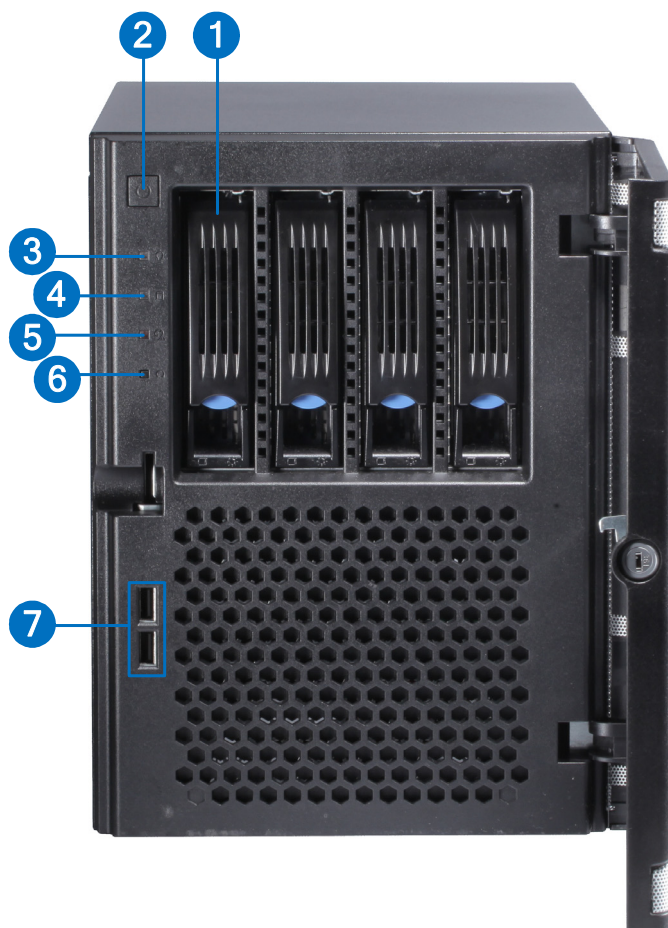


Figure 2-1

No.	Name	No.	Name
1	3.5" HDD Tray x 4	5	Not Functional
2	Power Button	6	Reset Button
3	Power LED (Blue)	7	USB 2.0 x 2
4	HDD Activity LED (Red)		

2.2 Rear View

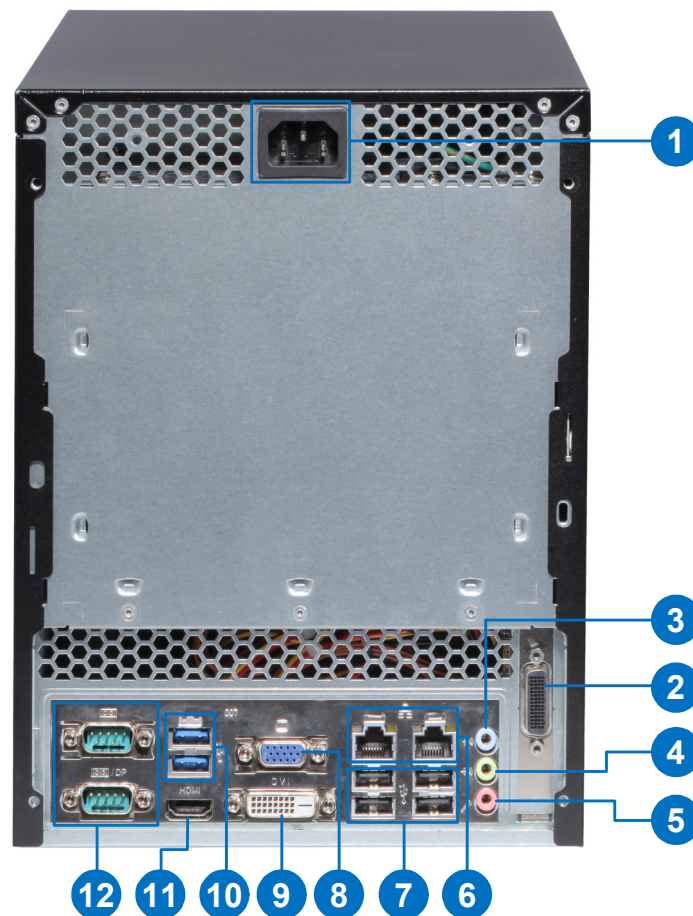


Figure 2-2

No.	Name	No.	Name
1	Power Connector	7	USB 2.0 Port x 4
2	LFH Audio and Video Connector*	8	VGA Monitor Output
3	Audio Line In Port	9	DVI-D Port
4	Audio Line Out Port	10	USB 3.0 Port x 2
5	Audio Microphone In Port	11	HDMI Port
6	Ethernet Port x 2	12	Not Functional

Note: The feature marked with * is for GV-Tower DVR System V2 only.

Chapter 3 Getting Started

3.1 Basic Installation

This section describes all the equipments required to program and operate the GV-Tower DVR/NVR/VMS System V2. Here we use GV-Tower DVR System V2 as the example.

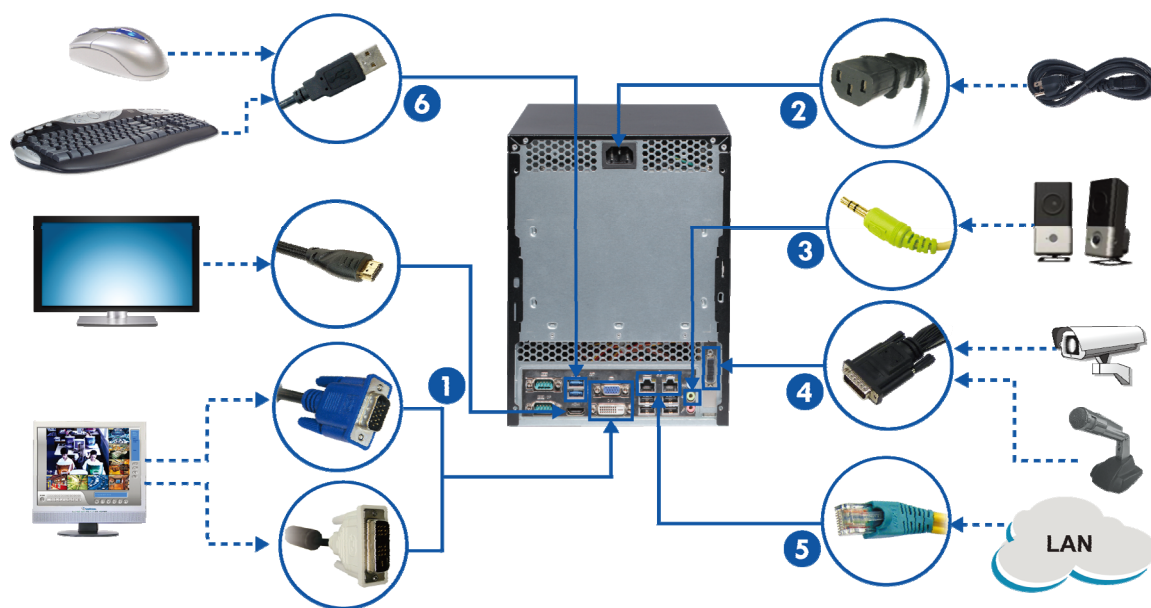


Figure 3-1

1. There are three ways to connect the monitor to the GV-Tower DVR/NVR/VMS System V2.
 - Using the VGA cable supplied by the monitor manufacturer, connect the VGA monitor.
 - Using the DVI-D cable supplied by the monitor manufacturer, connect the DVI-D monitor.
 - Using the HDMI cable supplied by the HDTV manufacturer, connect the HDTV.
2. Using the supplied power cord, connect one end to the AC input and the other end to the power outlet.
3. Connect speakers to the Audio Line Out port.

4. Using the supplied LFH Audio and Video cable, connect the yellow ends to the cameras, and the red ends to the microphones.
5. Using the RJ-45 cable, connect one end to the Ethernet port and the other end to Network.
6. Connect the mouse and keyboard to a USB port (either USB2.0 or USB3.0 port).

Once the above hardware is properly connected, press the Power button on the front panel to start the system. It takes about 1 minute for startup. The system should load automatically and display cameras in the main screen.

3.1.1 Using the IR Remote Control

The GV-IR Remote Control provides easy control of the GV-Tower DVR/NVR/VMS System V2. Its receiver should be plugged into any USB ports of the system.

For details, see *GV-IR Remote Control User's Manual* (GV-Desktop > **Program** button > **User Manual**).

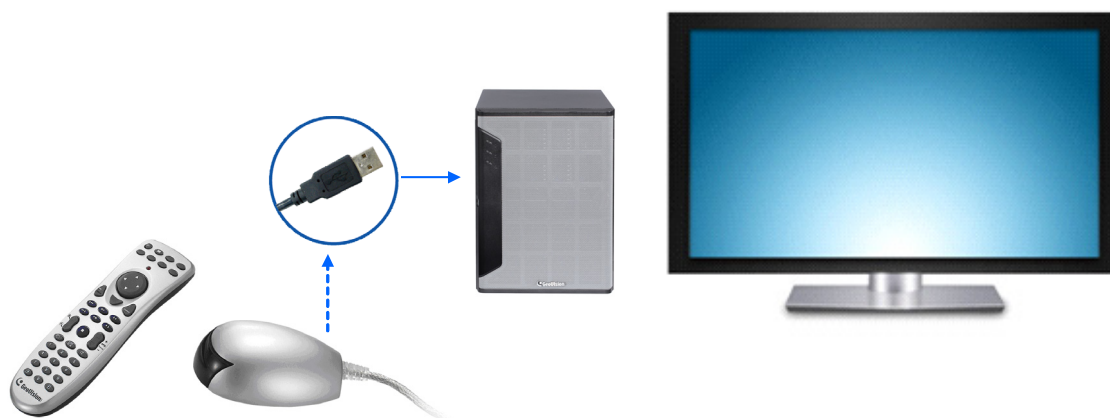


Figure 3-2

3.1.2 Connecting to 3 Monitors

You can connect the 3 monitors to the ports labeled below on the back panel of the GV-Tower DVR/NVR/VMS System V2. Here we use GV-Tower DVR System V2 as the example.

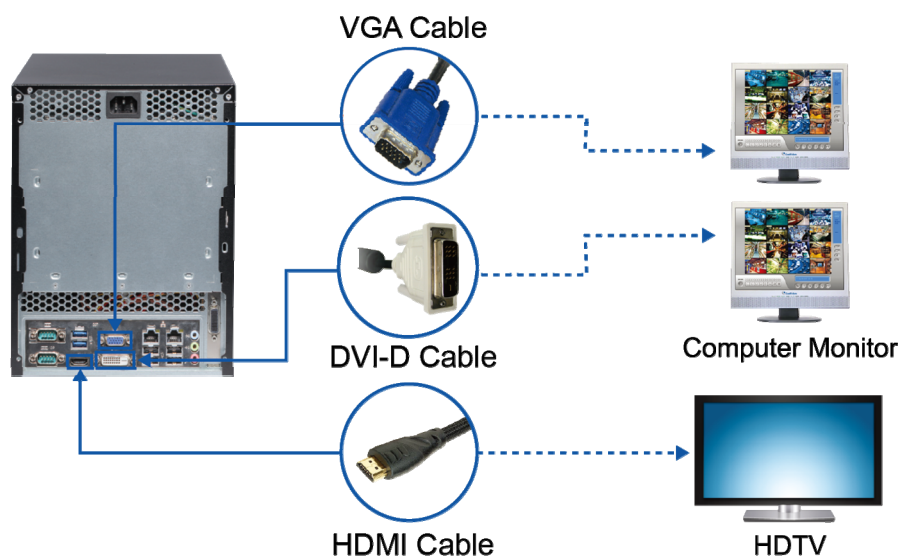


Figure 3-3

To install other required equipment, follow the steps in *3.1 Basic Installation*.

3.2 Installing the Hard Drive

The GV-Tower DVR/NVR/VMS System V2 uses SATA hard drives for video and audio data storage. Before recording, ensure to install your hard drives. Follow the below steps to install the hard drive.

1. Press the release latch. The drawer handle pops up.

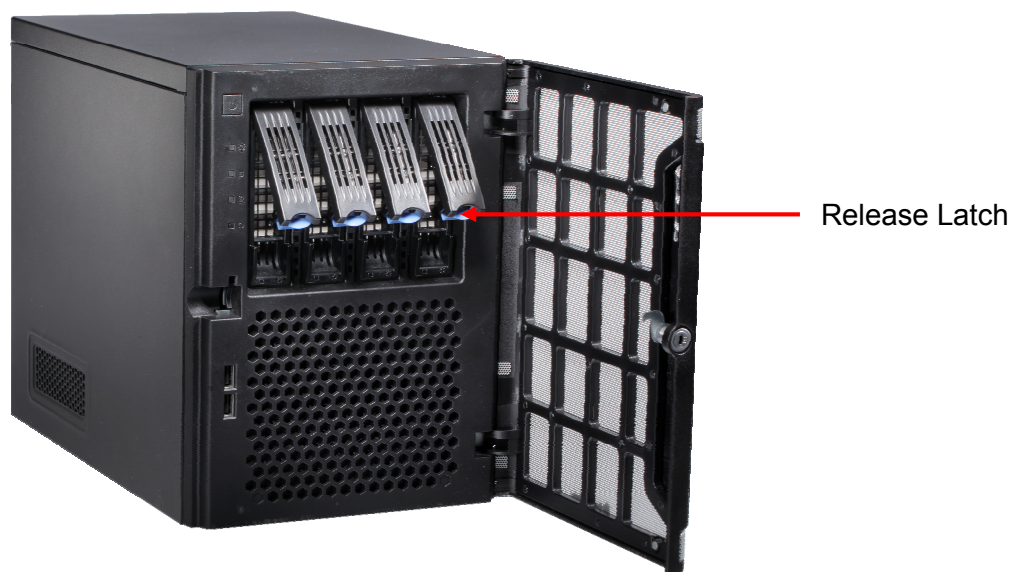


Figure 3-4

2. Pull out the drive drawer.
3. Remove the plastic carrier from the chassis.

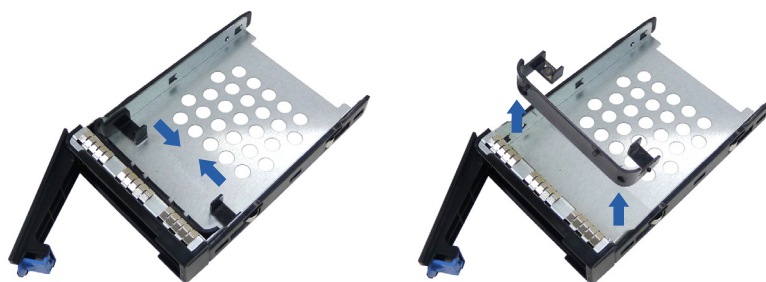


Figure 3-5

4. Insert the hard drive in the drawer.



Figure 3-6

5. Secure the hard drive with the 4 screws, and make sure all screw heads flush with the surface.



Figure 3-7

6. Put the drawer back in the drive bay of the GV-Tower DVR/NVR/VMS System V2, and push the latch until it locks.
7. When the Power LED on the drawer shines blue, the hard drive is now ready to use.



Figure 3-8

3.3 Windows Setup Installation

The Windows setup is preparing your computer for first use.

1. After the Windows starts, the following screen pops up. Select your language and click **Next**.

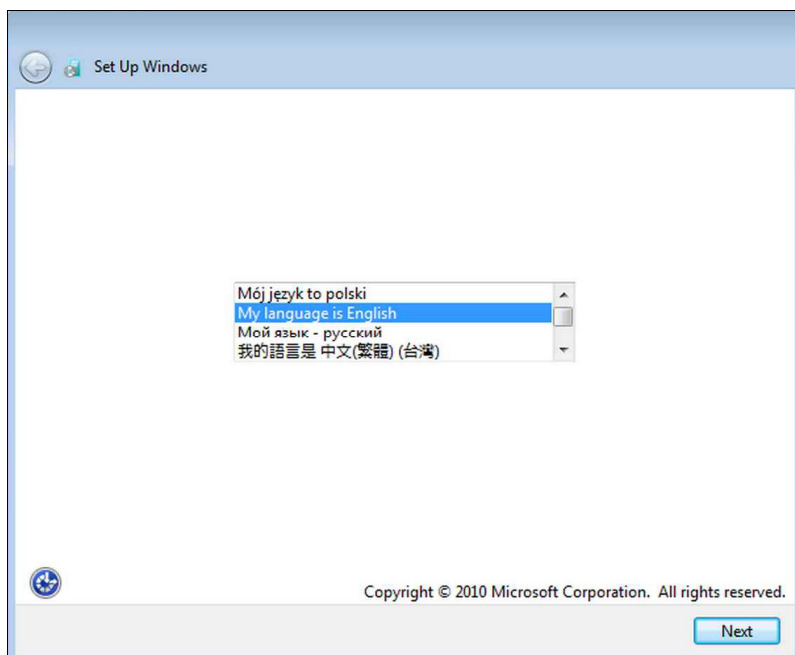


Figure 3-9

2. Select your country or region, time and currency and keyboard layout. Then click **Next**.

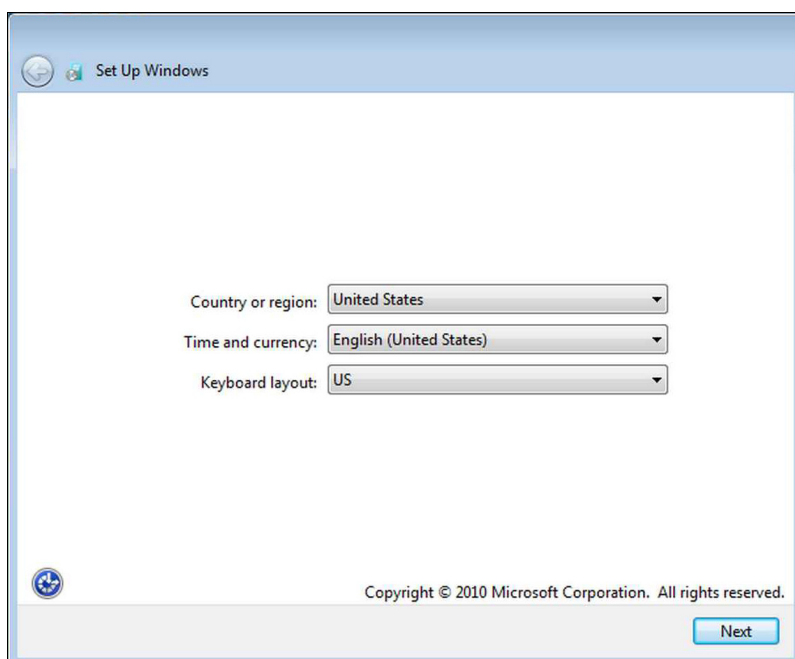


Figure 3-10

3. Type a user name for your account and then click **Next** to continue.

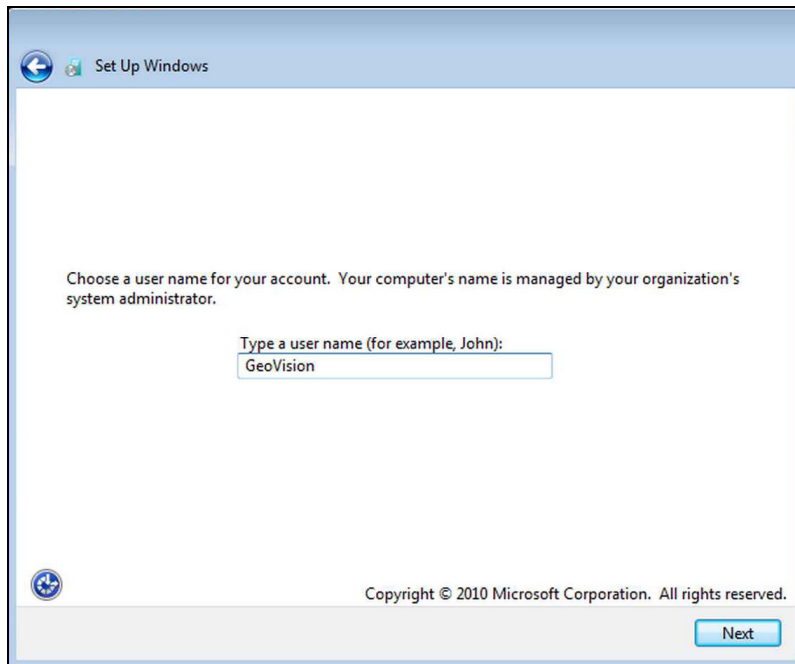
This is a screenshot of the 'Set Up Windows' window. The title bar says 'Set Up Windows'. The main text reads: 'Choose a user name for your account. Your computer's name is managed by your organization's system administrator.' Below this is a text input field with the placeholder text 'Type a user name (for example, John):' and the text 'GeoVision' entered. At the bottom right is a 'Next' button. The footer contains the text 'Copyright © 2010 Microsoft Corporation. All rights reserved.'

Figure 3-11

4. It is recommended that you create a password for your account and then click **Next** to continue.

This is a screenshot of the 'Set a password for your account' screen in the Windows Setup process. The title bar says 'Set Up Windows'. The main heading is 'Set a password for your account'. The text reads: 'Creating a password is a smart security precaution that helps protect your user account from unwanted users. Be sure to remember your password or keep it in a safe place.' There are three input fields: 'Type a password (recommended):' with six dots, 'Retype your password:' with six dots, and 'Type a password hint (required):' with the text 'hint' entered. Below these fields is a note: 'Choose a word or phrase that helps you remember your password. If you forget your password, Windows will show you your hint.' At the bottom right is a 'Next' button.

Figure 3-12

5. Since no license terms are specified, the page is left blank intentionally. Select **I accept the license terms** and click **Next**.

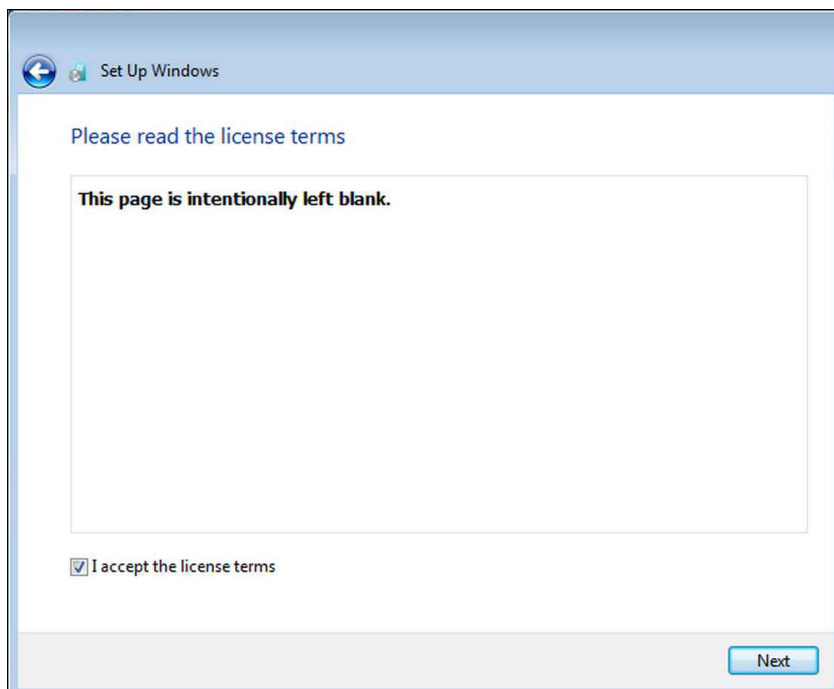


Figure 3-13

6. You are suggested to select **Ask me later** to disable Windows automatic update. Selecting the other two options may generate temporary files and result in wasting the internal disk space.



Figure 3-14

7. Select your time zone, date and time and click **Next**.

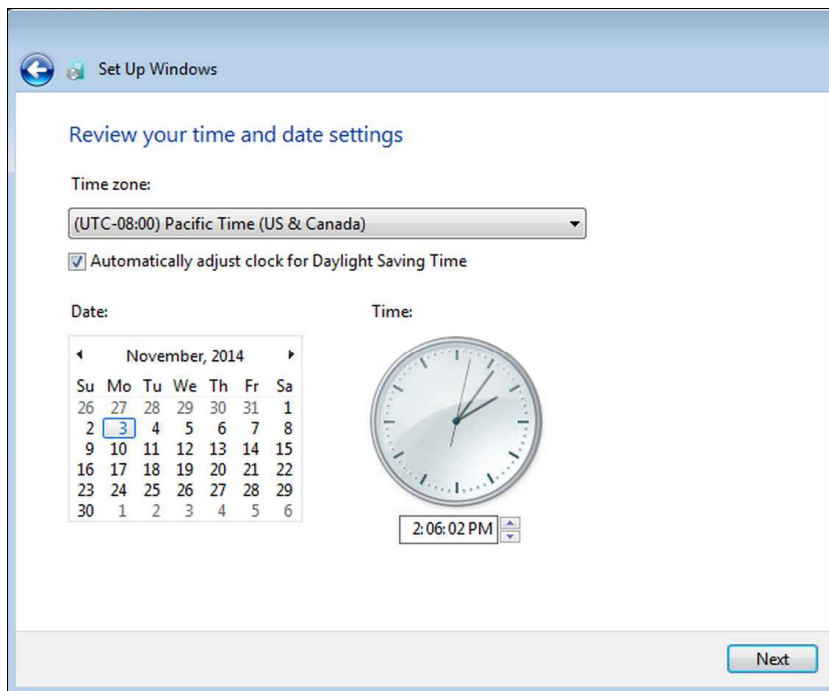


Figure 3-15

8. You are recommended to select **Work network** in the screen below to disable the network management share functions for security reasons.

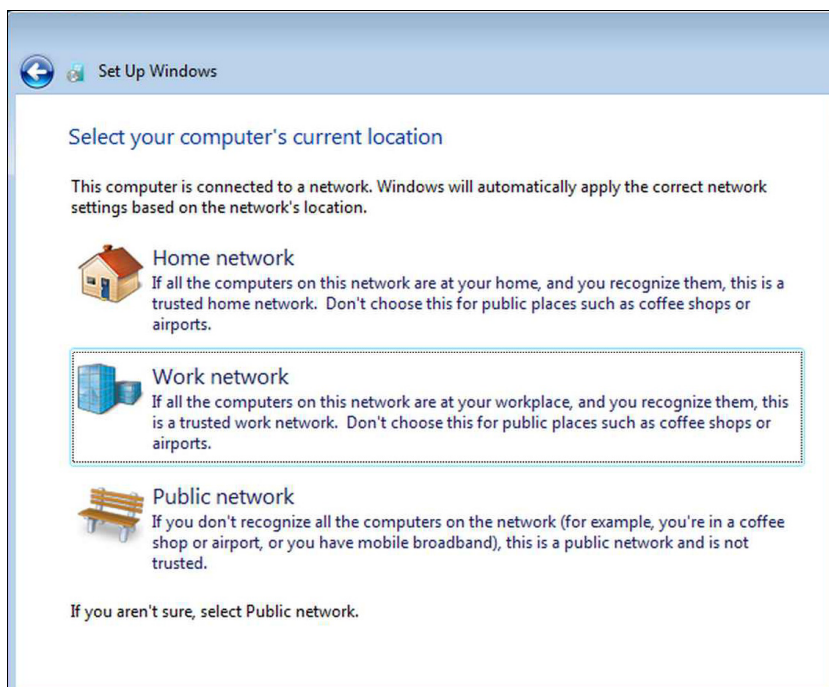


Figure 3-16

When the above setup process is complete, Windows will finalize your settings automatically in the background and restart.

3.4 Formatting the Hard Drive

After installing hard drives to your system, you will need to format them before use.

1. On the GV-Desktop, click the **Programs** button, and select **Disk Management**.

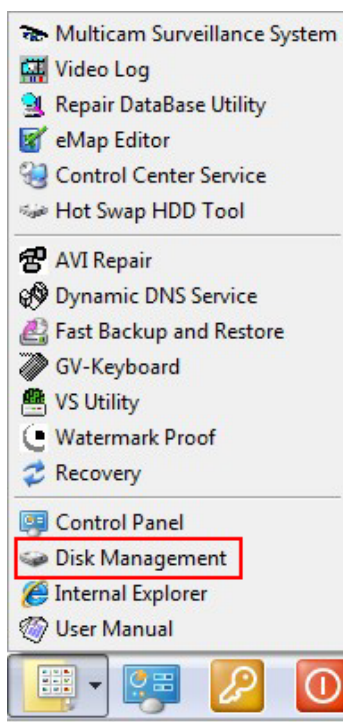


Figure 3-17

2. Type the ID and password in the dialog box. The default ID and password are “0000”.

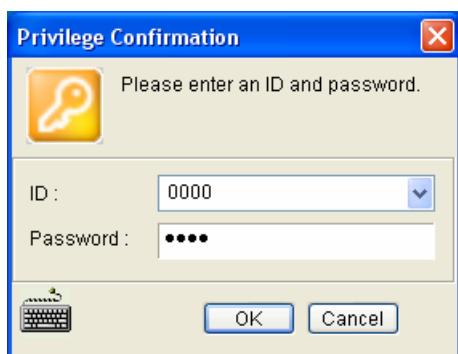


Figure 3-18

3. Right-click in the unallocated space of a new drive, and select **New Simple Volume**.

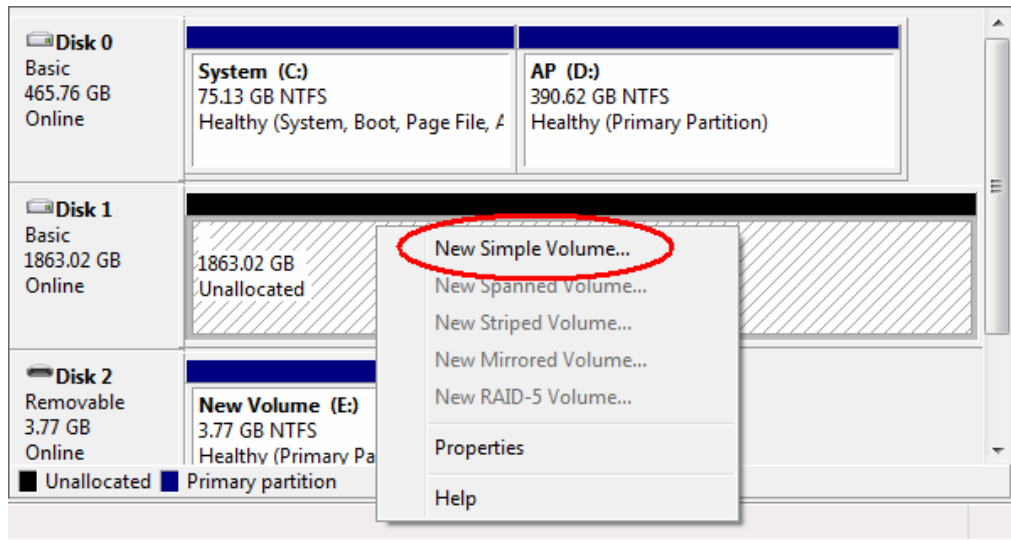


Figure 3-19

4. The New Simple Volume Wizard appears. Click **Next** to continue.

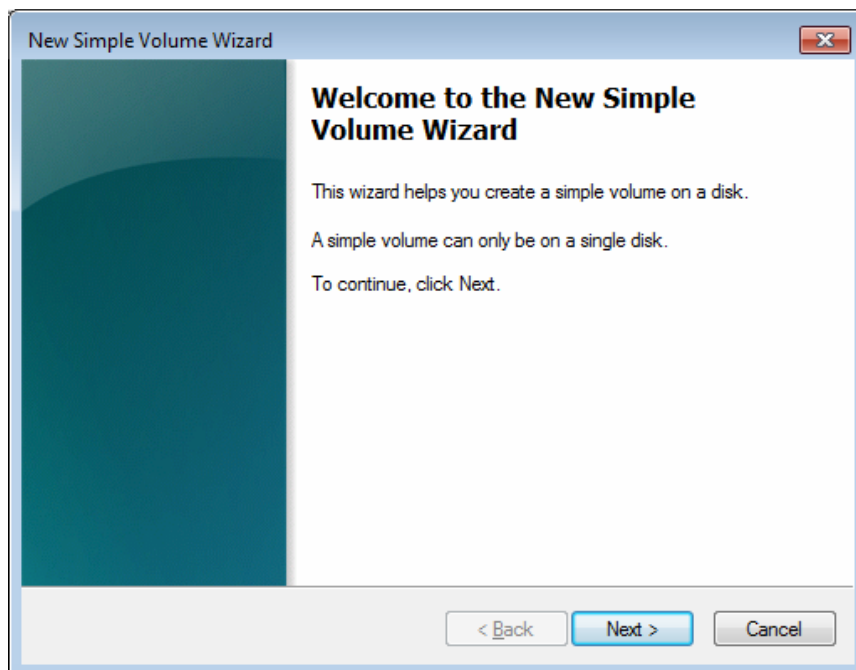


Figure 3-20

5. The default partition size is the same as the maximum disk space. Make changes if necessary. Click **Next** to continue.

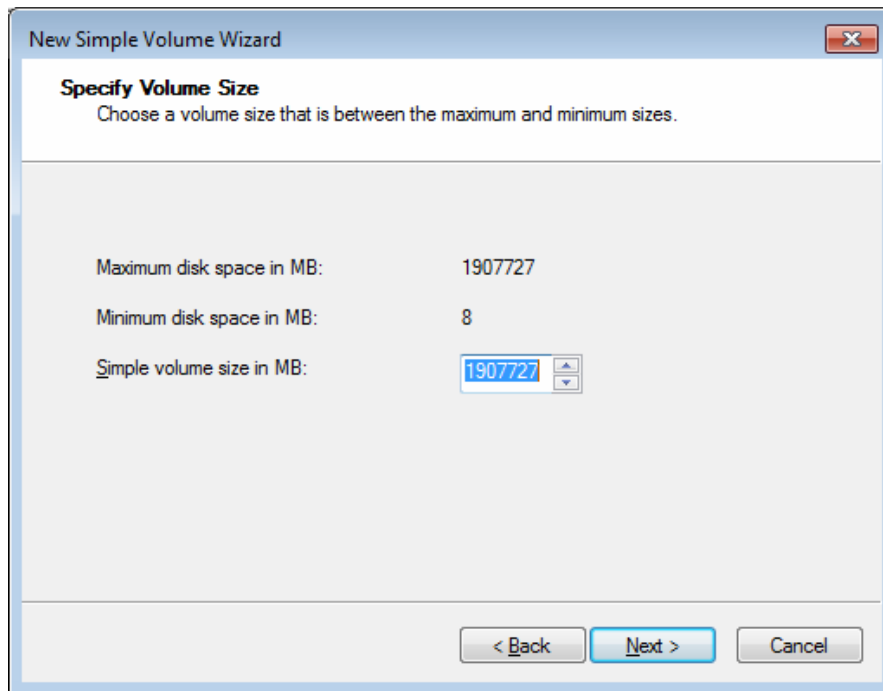


Figure 3-21

6. Assign a drive path that is not in use by other devices, and click **Next** to continue.

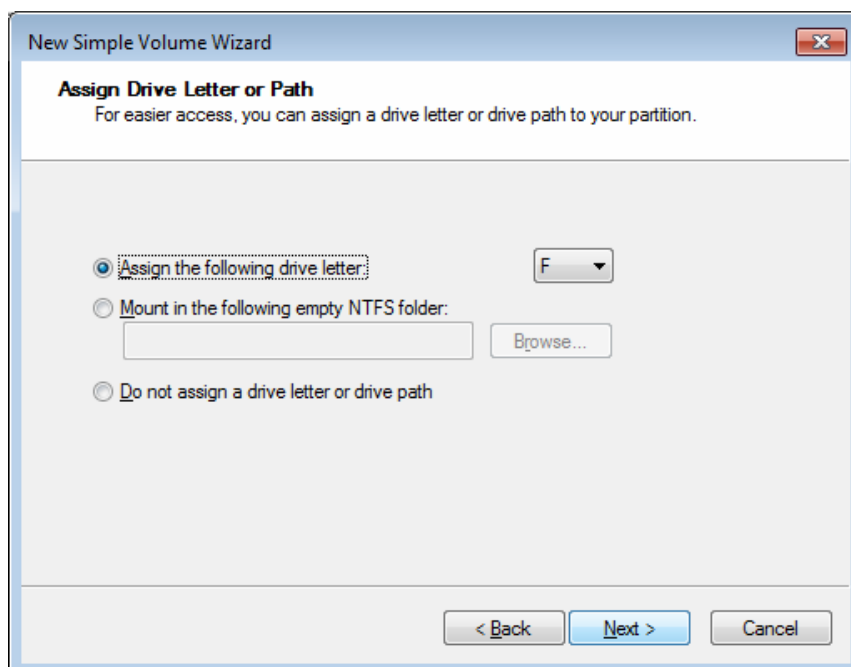


Figure 3-22

Note: The default drive path starts from D:\.

7. Type a name in the **Volume label** box, ex. HDD1, and click **Next** to continue.

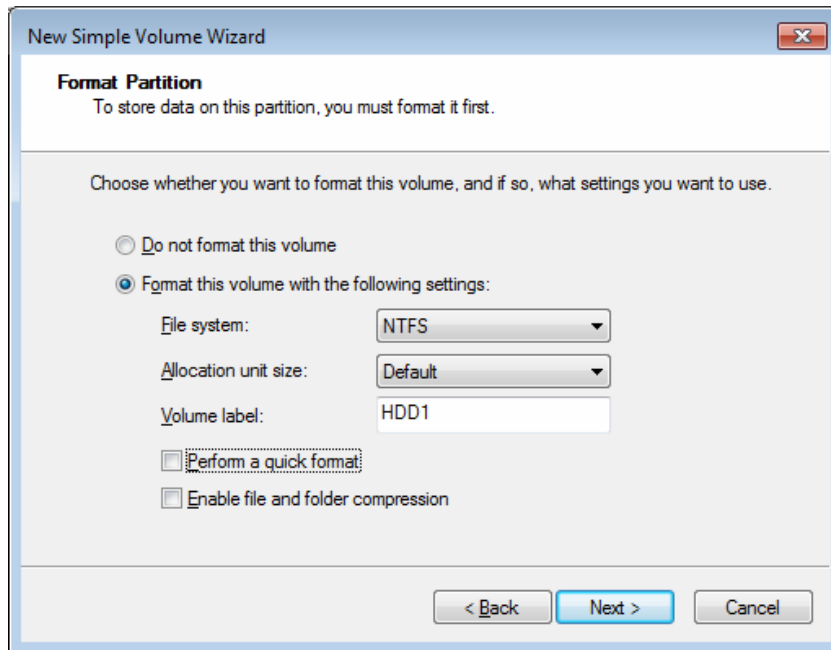


Figure 3-23

8. When the formatting is complete, click **Finish** to close the wizard.

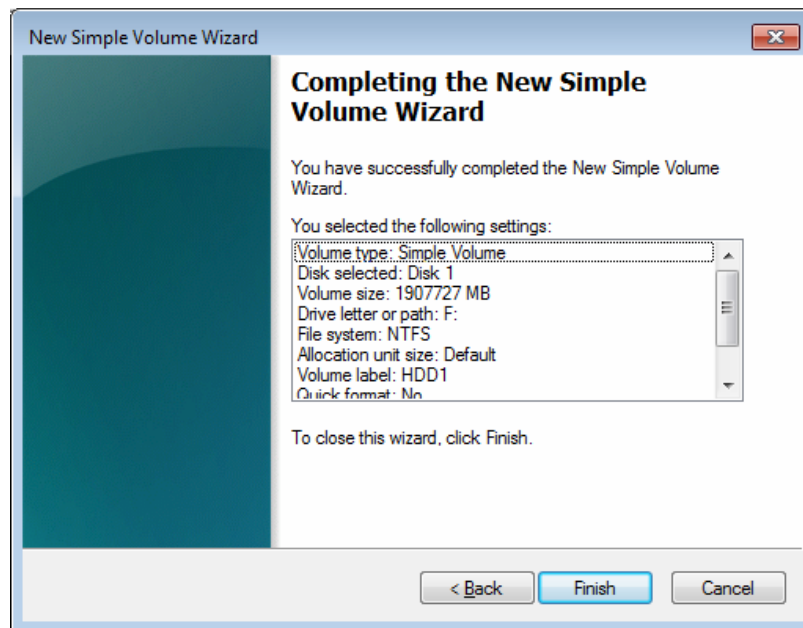


Figure 3-24

9. When the drive is successfully initialized, partitioned, and formatted, its status description should display “*Healthy*.”

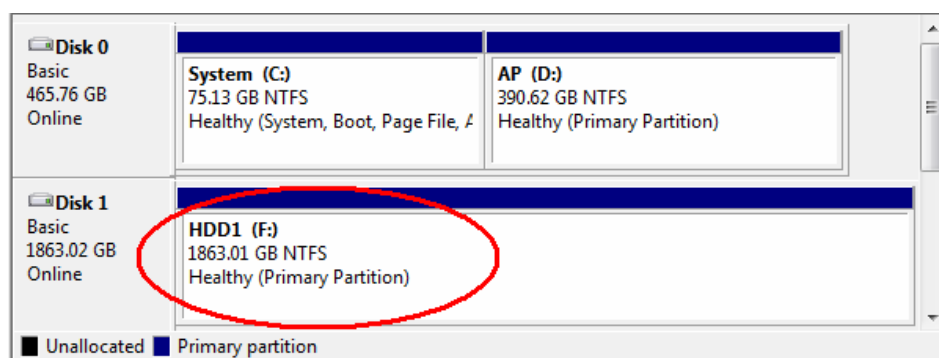


Figure 3-25

3.5 Adding the Hard Drive to the Recording Path

For GV-Tower DVR/NVR/VMS System V2, you need to add the formatted hard drives to the recording path before recording.

3.5.1 GV-Tower DVR/NVR System V2

1. On the GV-Desktop, click the **Programs** button, and select **Hot Swap HDD Tool**. The MediaMan Tools window appears.

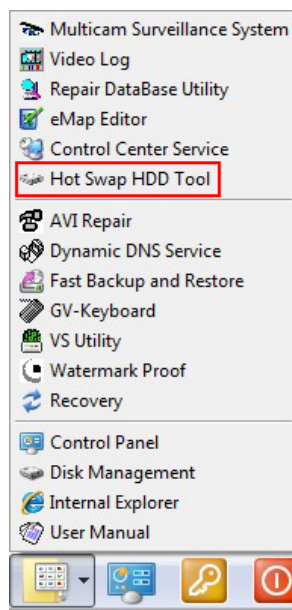


Figure 3-26

2. If a hard drive is already inserted, right-click it in the MediaMan Tools window, select **Add for recording**, and then select the storage group from the drop-down list.

3. If a hard drive is not inserted, follow these steps:

A. Insert a hard drive or plug a USB hard drive to the GV-Tower DVR/NVR System V2.

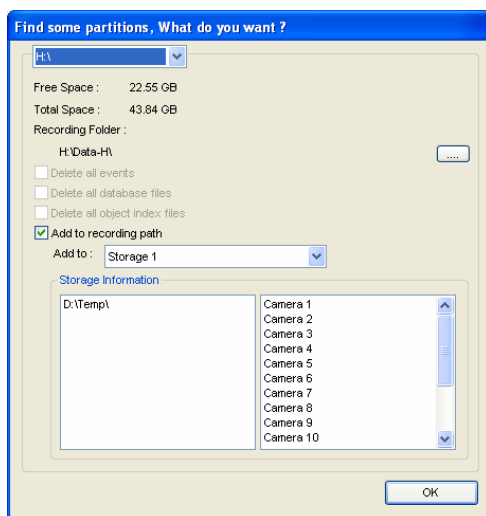


Figure 3-27

B. Select **Add to recording path**, and select the storage group from the drop-down list.

Note: Storage 1 is the default storage group.

4. Click **OK** to automatically configure the hard drive to the recording path.

5. In the MediaMan Tools window, if the hard drive is successfully added to store data, its Status field should display “Standby”.

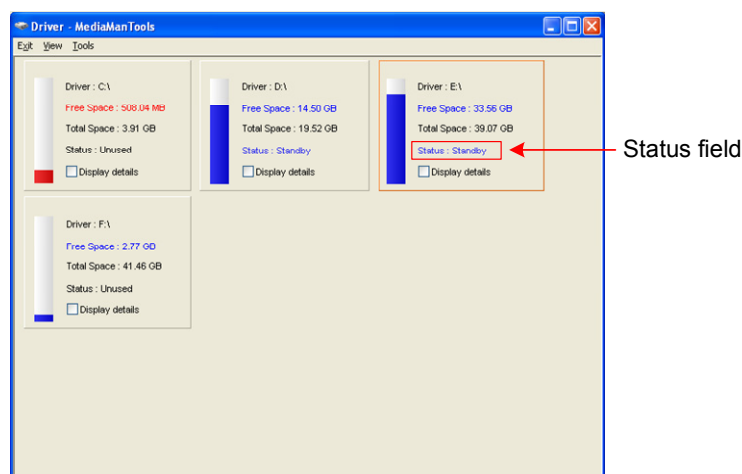





Figure 3-28

6. To add another formatted hard drive for storage, repeat the above steps.

For the details on using Hot Swap HDD Tool, see *Hot-Swap Recording*, Chapter 11, *DVR User's Manual* (GV-Desktop > **Program** button > **User Manual**).

3.5.2 GV-Tower VMS System V2

1. On the GV-VMS, click **Home** , select **Toolbar** , select **Configure** , select **System Configure**, and click **Record Setting**. This dialog box appears.

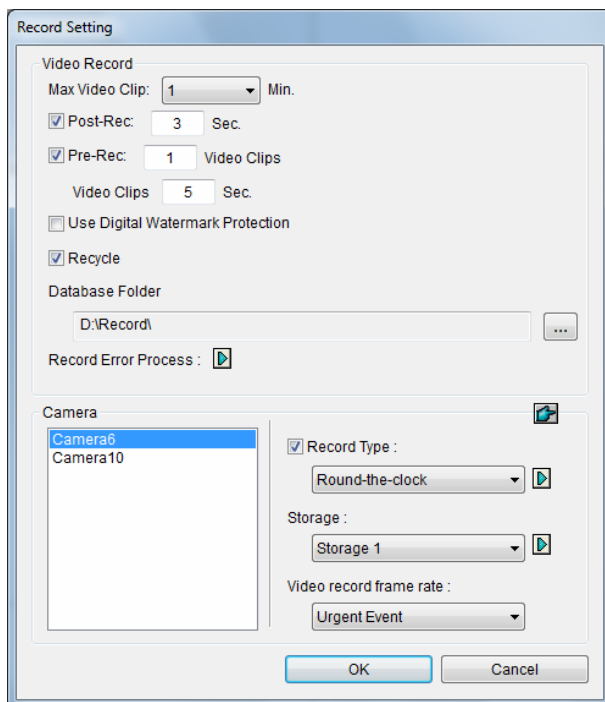



Figure 3-29

2. Click the Arrow button  next to **Storage**. This dialog box appears.

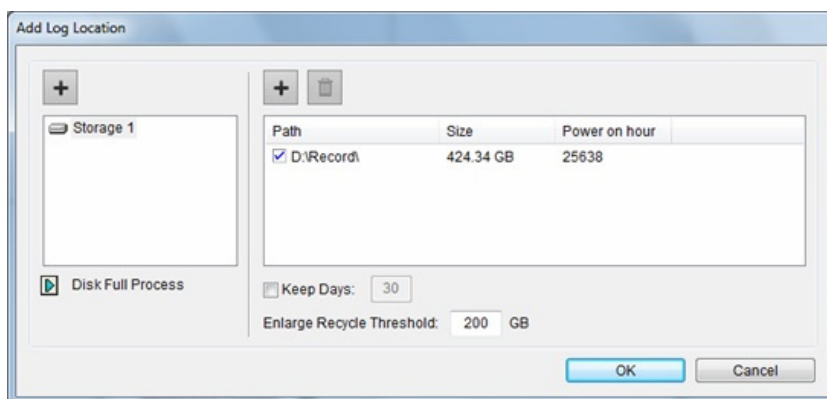


Figure 3-30

3. To add a hard drive to the recording path, follow these steps:

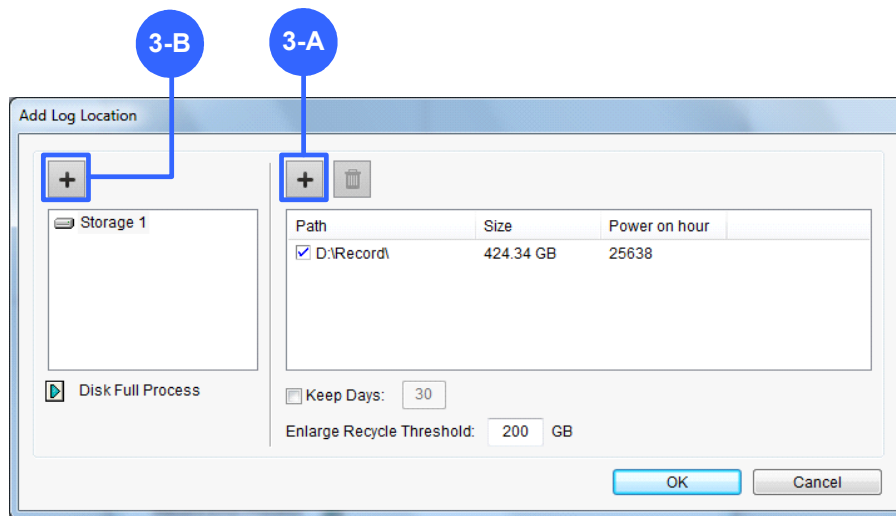




Figure 3-31

- A. To add a new folder in the first storage group, click the **Add** button  on the right pane and select a folder. Only 1 folder can be assigned as storage folder for each partition (e.g. only 1 folder in D drive).
 - B. To add a new storage group, click the **Add** button  on the left pane and repeat the step 3-A to assign at least one folder to the storage group.
 - C. Click **OK**.
4. To add another formatted hard drive for storage, repeat the above steps.

For the details on setting the recording path, see *Setting Up the Video Storage Location* Chapter 1, *GV-VMS User's Manual* (GV-Desktop > **Program** button > **User Manual**).

3.6 Setting Up On-Screen LED Panel

For GV-Tower DVR/NVR/VMS System V2, a LED panel on the screen provides a quick indication of the activity status of hard disk drives.



Figure 3-32

LED Color	Description
Gray	- No HDD is assigned to this LED. - The system is not started.
Green	A HDD is assigned to this LED.
Red	The HDD is full.
Flashing Green	The system is recording.
Flashing Red	The HDD is recycling.

1. On the GV-Desktop, click the **Programs** button, and select **Hot Swap HDD Tool**.
2. Click **Tools** on the menu bar, and select **Setup LED Panel**. This dialog box appears.

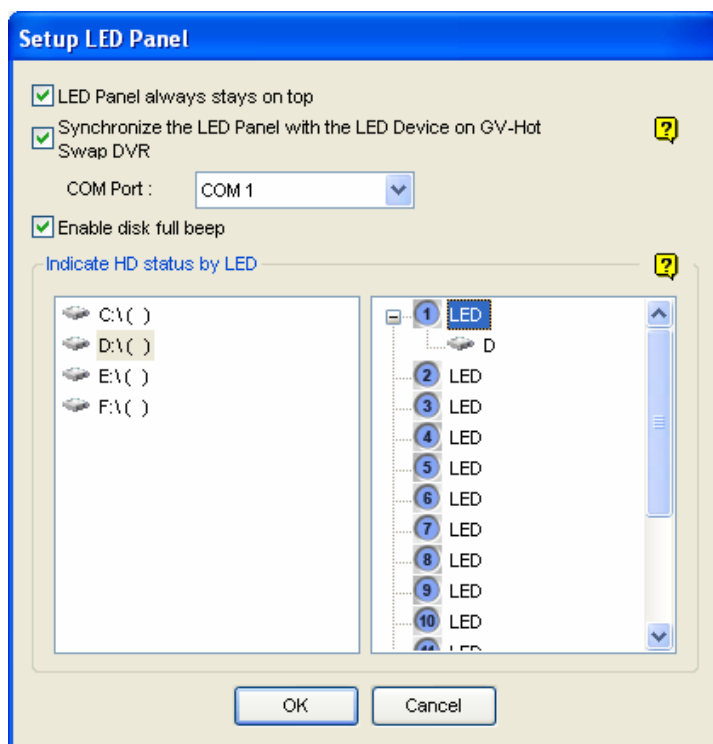


Figure 3-33

- **LED Panel always stays on top:** This option makes the LED panel stay on top of other windows when the Media Man Tools window is minimized.
 - **Synchronize the LED Panel with the LED Device on GV-Tower System V2:** Not functional on **GV-Tower DVR/NVR/VMS System V2**.
 - **Enable disk full beep:** When the hard disk drive is full, the system sounds on. Note this function only works when speakers are connected to the GV-Tower DVR/NVR/VMS System V2.
3. By default, only the hard disk drive D will be assigned to LED. If you want to re-assign the hard disk drive or assign other drives to LEDs, freely drag and drop the hard disk drive to the desired LED on the tree.
 4. Click **OK** to apply the settings, and minimize the MediaMan Tools window to display the LED panel on the screen.
 5. If you want to return to the MediaMan Tools window, right-click the LED panel and select **Switch to the setup window**.

Note:

1. Because the LEDs are designed to indicate the video and audio files are being written or read, it is not recommended to assign the HDDs that store log files to the LEDs.
 2. If the HDD that stores log files is assigned to a LED and its LED turns red, make sure the log files are not being written before you remove it. Otherwise, the log files might be lost during the removal.
-

3.7 Replacing the Hard Drive

You can replace the hard drive without shutting down the GV-Tower DVR/NVR/VMS System V2.

1. Do not turn off the power before you replace the hard drive.
2. Push the release latch. The drawer handle pops up.
3. Lift the handle, pull out the drawer slightly and wait until the hard drive spins down.
4. Pull out the drawer completely, remove the hard drive, and then mount a new one.
5. Put the drawer back in the drive bay.
6. Push the release latch until it locks.

3.8 Configuring the IP Address

GV-Tower DVR/NVR/VMS System V2 supports remote monitoring, control and configuration over a network connection. The following default IP addresses will automatically be assigned.

- **Connection 1: 192.168.0.200**
- **Connection 2: 192.168.0.201**
- **Default Subnet Mask: 255.255.252.0**

The local area connections listed correspond to the Ethernet ports as shown below:

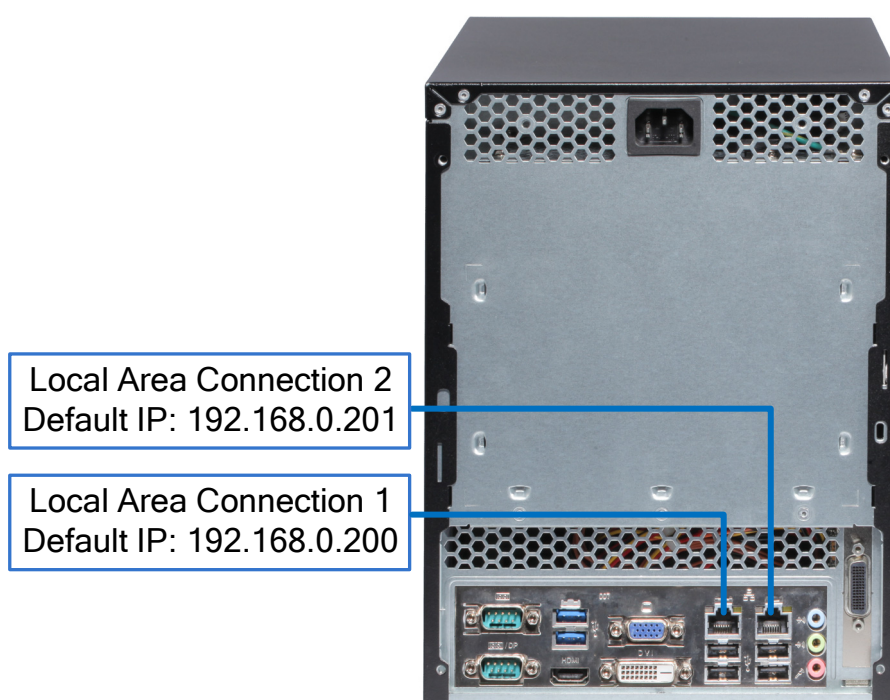


Figure 3-34

To change the above default IP addresses, follow the steps below.

1. On the GV-Desktop, click the **Programs** button, and select **Control Panel**.



Figure 3-35

2. Type the ID and password. The default ID and password are “0000”. The Control Panel window appears.
3. Under Network and Internet, click **View network status and tasks**.

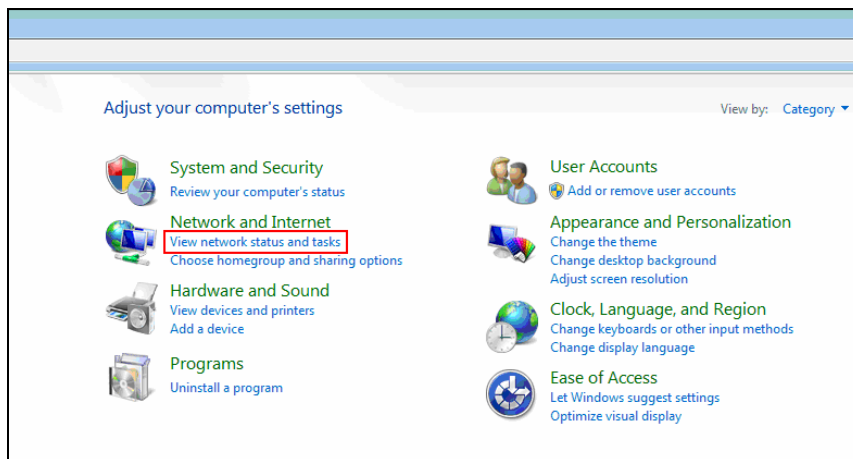


Figure 3-36

- Under Connections, select the **Local Area Connection** you want to configure.

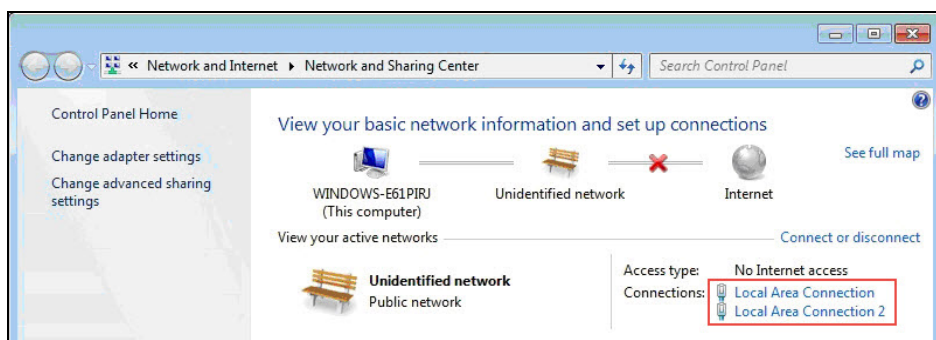


Figure 3-37

- Select **Internet Protocol Version 4 (TCP/IPv4)**, and select **Properties**.

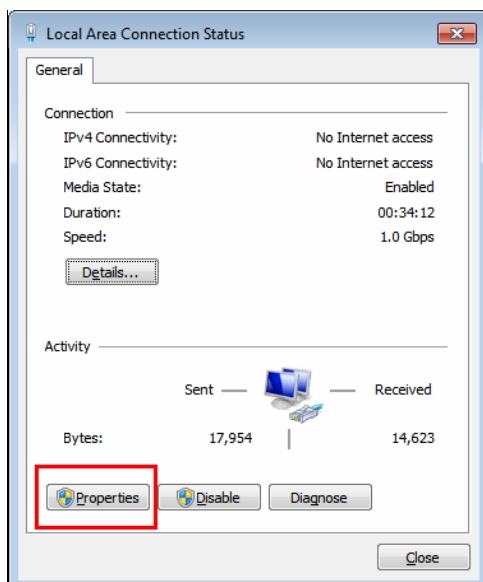


Figure 3-38

6. Select **Use the following IP address** and type the new IP information in the fields. Or select **Obtain an IP address automatically** to enable dynamic IP address.

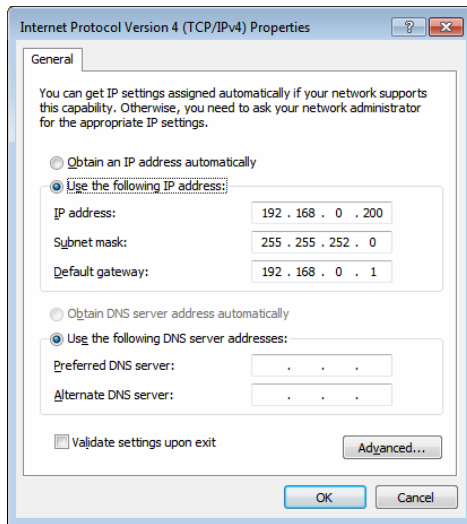


Figure 3-39

7. Click **OK** to finish the setting.

3.9 Exiting to Windows

GV-Tower DVR/NVR/VMS System V2 are protected by GV-Desktop that is limited to run the selected programs. If you need to exit to Windows desktop, follow these steps.

1. Exit the main screen to display the GV-Desktop screen.

- GV-DVR/NVR:



- GV-VMS:



Figure 3-40

2. Click the **Settings** button, and type the valid ID and password. The default ID and Password are "0000". The Settings dialog box appears.
3. Under Desktop Type, select **Windows** from the drop-down list, and click **OK**.
4. Click the **Log Off** button, and type the ID and Password to display the Windows desktop.

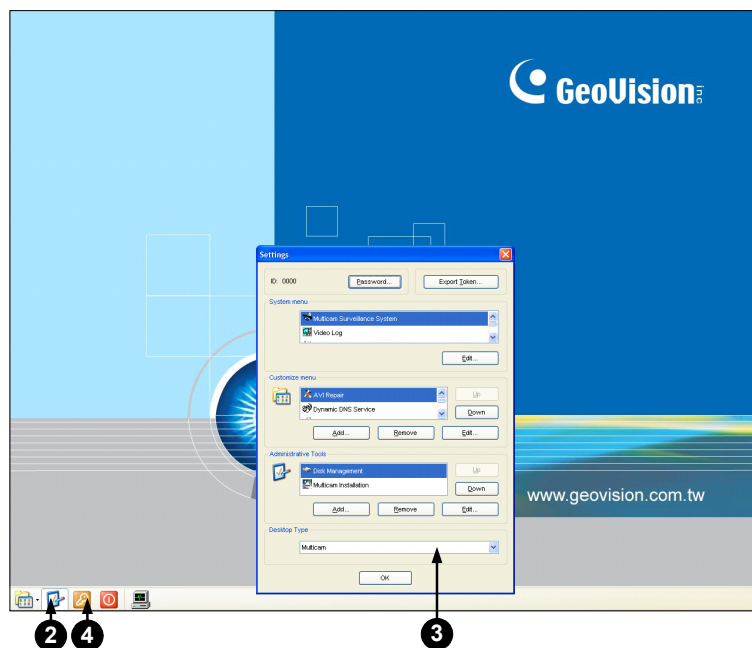


Figure 3-41 The GV-Desktop

3.10 Returning to GV-Desktop

To return to GV-Desktop, click the Windows **Start** button, point to **All Programs**, click **GV-DVR/NVR/VMS**, and click **Key Lock Utility**.

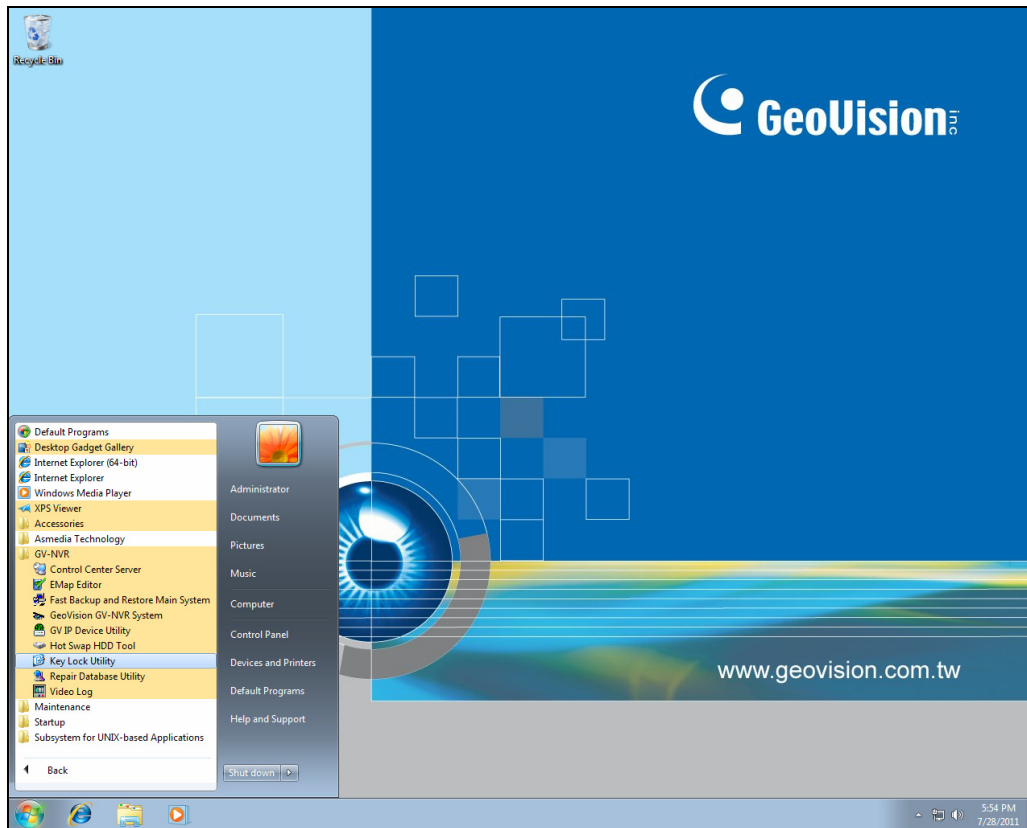


Figure 3-42

3.11 Twin View Display

3.11.1 GV-Tower DVR/NVR System V2

You can display live view and play back video in two separated monitors.

1. Follow Steps 1 and 2 in 3.8 *Configuring the IP Address* to access the Control Panel window. See Figure 3-36.
2. In the Control Panel window, click **Adjust Screen Resolution** under the Appearance and Personalization section. This dialog box appears.

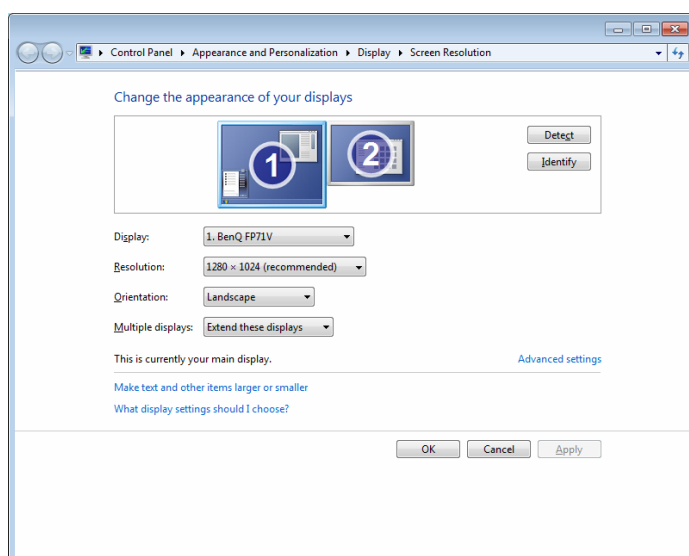


Figure 3-43

3. Click the **Display** list. If you do not see multiple monitors listed, check if your additional monitors are connected with the system properly.
4. Select the primary monitor from the list, and select **Make this my main display**.
5. Select additional monitors from the list, and select **Extend these displays** in the Multiple displays drop-down list.
6. Click **Identify**. Drag and drop the monitor icons to match the physical arrangement of your monitors.
7. Click **OK**.

8. Click the **Up** button on the toolbar, go to the system folder and locate **DMPOS.exe**.

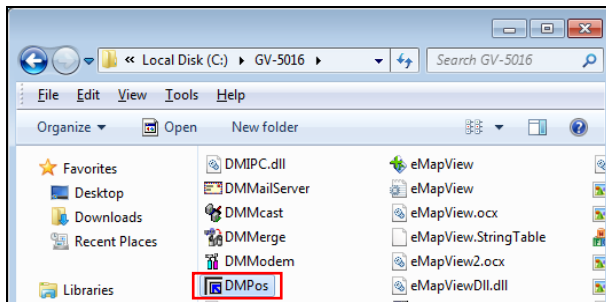


Figure 3-44

9. Double-click **DMPOS.exe**. The Set Application Function Position dialog box appears.

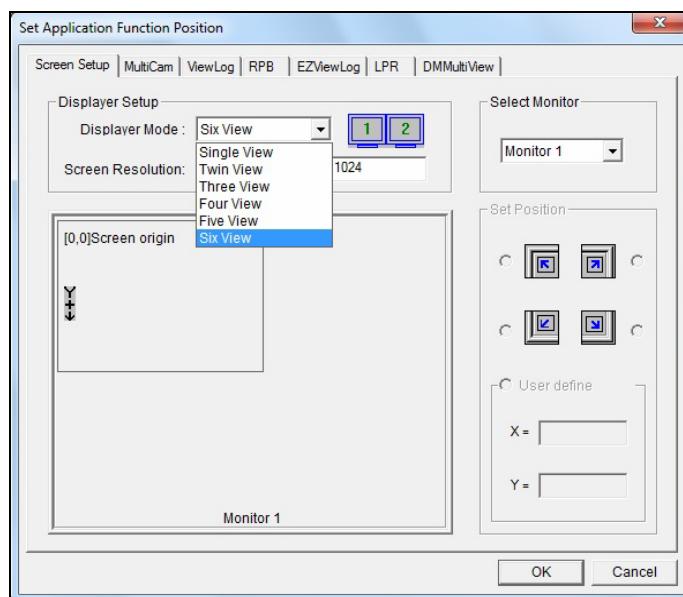





Figure 3-45

10. In the Screen Setup tab, select **TwinView** from the Displayer Mode drop-down list.
11. To define the live view monitor, in the MultiCam tab, select **Monitor 1** from the Select Monitor drop-down list.
12. Click the desired application tab to move the application to another monitor. In this case, ViewLog is used as an example.
13. To define the playback monitor, in the ViewLog tab, select **Monitor 2** from the Select Monitor drop-down list.
14. Click the **OK** button.
15. Exit and re-start the system. The live view should appear on monitor 1.
16. Click the **ViewLog** button on the main screen and select **Video/Audio Log** from the menu. The ViewLog player should appear on monitor 2.

3.11.2 GV-Tower VMS System V2

You can customize the display settings of GV-VMS. Click **Home** , select **Toolbar** , select **Configure** , select **System Configure**, and click **Set Position**. This dialog box appears. The right side of the dialog box is only available when multiple monitors are installed.

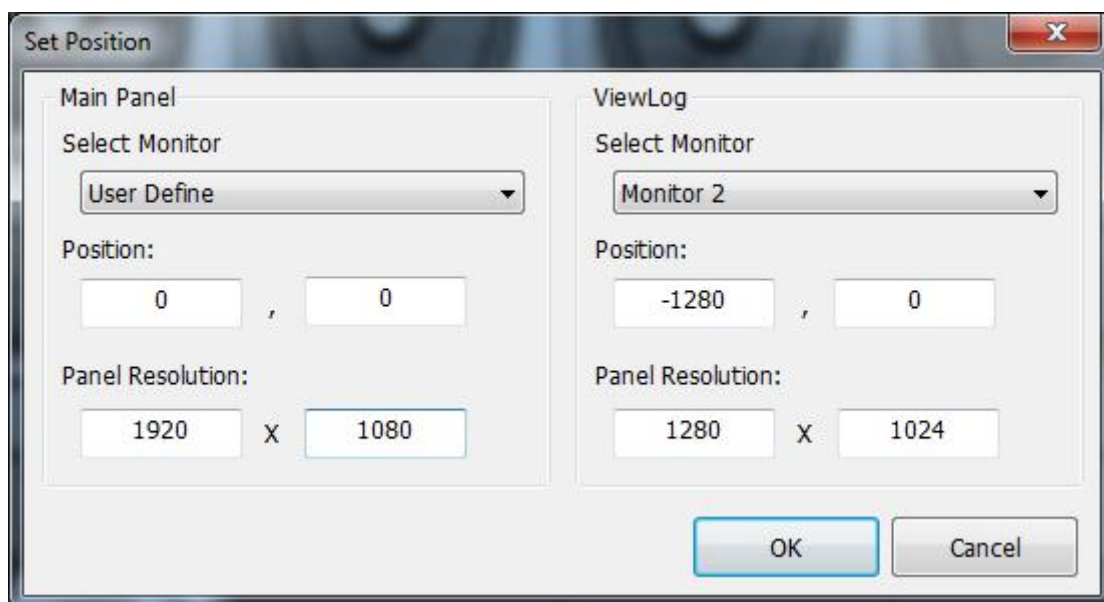


Figure 3-46

- **Select Monitor:** If you have multiple monitors connected, select the monitor you want to configure from the drop-down list.
- **Position:** Offsets the position of the GV-VMS window relative to the upper-left corner of the screen. The default position is 0, 0. A position of 100, 60 will place the GV-VMS window 100 pixels to the right and 60 pixels below the upper-left corner. This function is only supported when the GV-VMS window does not take up the entire screen.

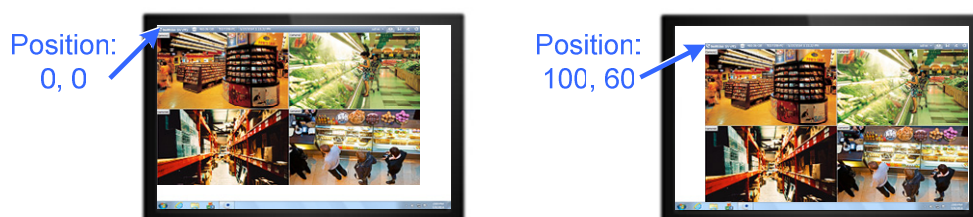


Figure 3-47

- **Panel Resolution:** Sets the Panel Resolution of the GV-VMS.

3.12 Digital Matrix

To display multiple channels through two monitors, Digital Matrix is thus introduced to provide a method.

The Digital Matrix includes these features:

- **Live view:** You can set different live views and screen divisions for each monitor.
- **Automatic channel scan:** You can set up to 16 scanned pages with different screen divisions and channels for each monitor.
- **Pop-up Alert:** You can be alerted by pop-up live videos when motion is detected or I/O devices are triggered.

Note: Digital Matrix is not supported by GV-Tower VMS System V2.

3.12.1 Activating Two Monitors

Use Windows Display Property to activate multiple monitors.

1. Follow Steps 1 to 6 in 3.11 *Twin View Display* to configure the second monitor.
2. Start the GV-System, click the **Configure** button, click **Accessories**, select **Digital Matrix Setting**, select monitors from the **Display** list and select **Activate** for each monitor. All monitors must be activated one by one.
3. Click **Apply**. Your additional monitor should now display the channels seen on the primary monitor.

3.12.2 Setting Live View

You can set different live views and screen divisions for each monitor.

1. On the main screen, click the **Configure** button, click **Accessories**, and select **Digital Matrix Setting**. This dialog box appears.

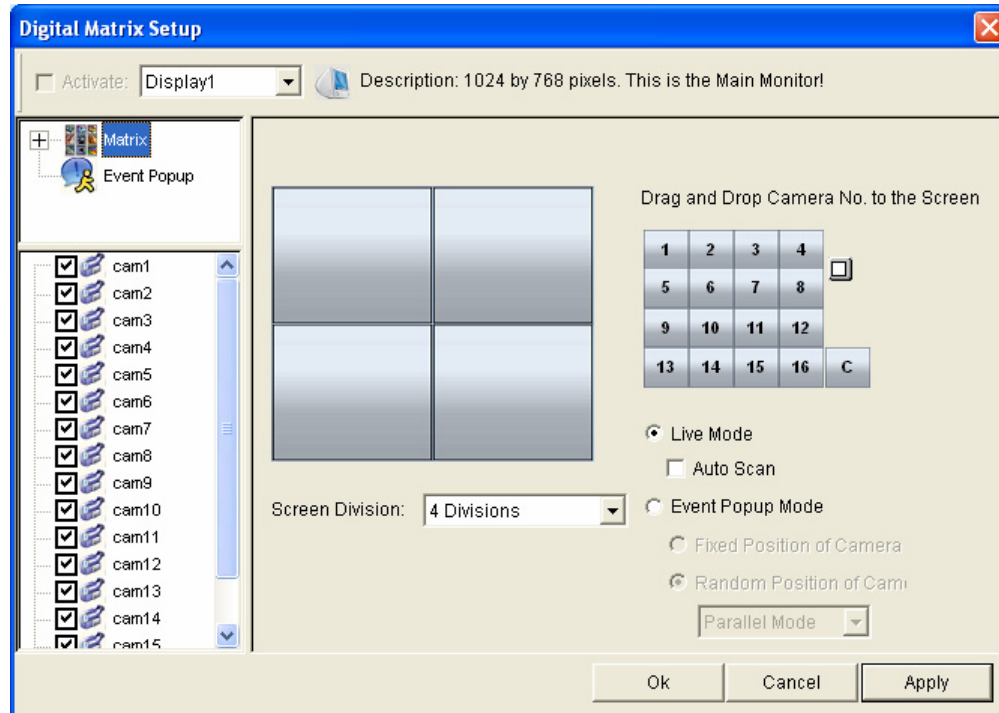


Figure 3-48

2. Use the **Display** list to select the monitor to be configured.
3. Select **Screen Division**.
4. Drag and drop the camera numbers to the desired positions on the divisions. To clear the assignment, drag and drop the “C” icon to that position.
5. Select **Live Mode**.
6. Repeat above steps to configure other monitors.
7. Click **OK** to apply the settings.

3.12.3 Setting Scanned Pages

You can set up to 16 scanned pages with different screen divisions and channels for each monitor.

1. Use the **Display** list to select the monitor to be configured.
2. In the upper-left column, expand the **Matrix** folder tree, and click **Page 1**. This page appears.

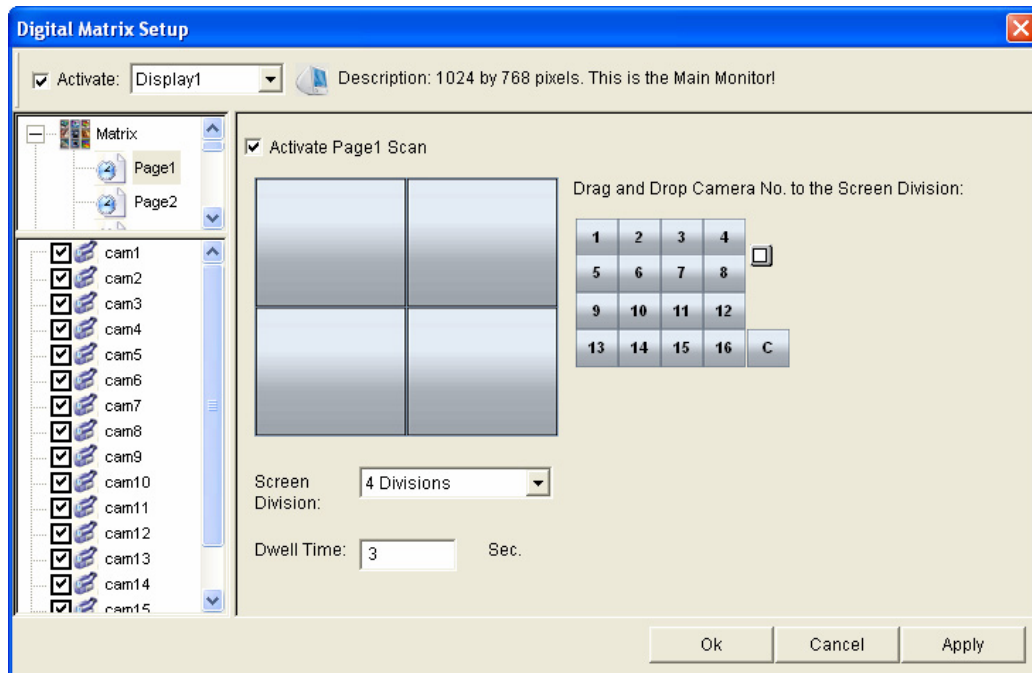


Figure 3-49

3. Select **Activate Page 1 Scan**.
4. Select **Screen Division**.
5. Drag and drop the camera numbers to the desired positions on the divisions. To clear the assignment, drag and drop the "C" icon to that position.
6. Specify **Dwell Time** for how long this scanned page remains on the monitor.
7. Repeat Steps 2 to 5 to configure more scanned pages for the specific monitor.
8. Repeat Steps 1 to 7 to configure scanned pages for the second monitor.
9. In the upper-left column, click the **Matrix** icon and return to Figure 3-48.
10. Select **Auto Scan**.
11. Click **OK** to start scanning among pages.

3.12.4 Setting Pop-up Alert

You can be alerted by pop-up live videos when motion is detected or I/O devices are triggered.

1. Use the **Display** list to select the monitor to be configured.
2. In the upper-left column, click **Event Popup**. This page appears.

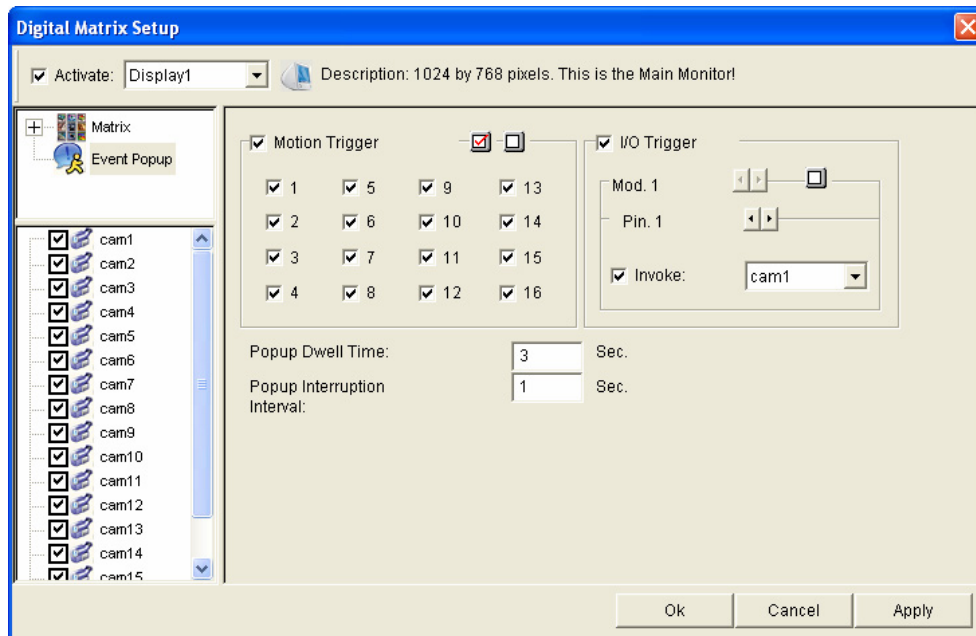


Figure 3-50

- **Motion Trigger:** The live video of selected cameras pops up when motion is detected.
 - **I/O Trigger:** The live video of assigned camera pops up when the selected input device is triggered.
 - **Popup Dwell Time:** Specify the amount of time that a pop-up live video remains in the foreground.
 - **Popup Interruption Interval:** Specify the interval between camera pop-ups. This option is useful when several cameras are activated for pop-up alert at the same time.
3. Use the **Display** list to select other monitors for setup.
 4. After above settings, click the **Matrix** icon and return to Figure 3-48.
 5. Select **Event Popup Mode**. Then select **Fixed Position of Camera** or **Random Position of Camera**. For these two options, see 3.11.4.1 *Setting Pop-up Positions*.
 6. Click **OK**.
 7. Start monitoring. When motion is detected or the input device is triggered, the live video will pop up for alert.

3.12.4.1 Setting Pop-up Positions

When you select **Random Position of Camera**, you can decide the positions for pop-up cameras.

- **Fixed Position of Camera:** The cameras pop up in their assigned positions. To assign positions, select **Screen Division**. Then drag and drop the cameras number to the desired potions on the divisions.
- **Random Position of Camera:** The positions of pop-up cameras are based on the sequence order of triggers. There are two modes for this position:
 1. **Cascade Mode:** This mode can avoid the same cameras popping up on different monitors. This is suggested to be used when multiple monitors are placed close to each other.

Example:

Camera 1, Camera 2, Camera 3, Camera 4 and Camera 5 are assigned for pop-up alert on both Monitor 1 and Monitor 2. Monitor 1 is set at 4 screen divisions. When the five cameras are triggered at same time, the first 4 cameras show up on Monitor 1 and the 5th on Monitor 2.

<table border="1"> <tr> <td>1</td><td>2</td></tr> <tr> <td>3</td><td>4</td></tr> </table>	1	2	3	4	<table border="1"> <tr> <td>5</td><td></td></tr> <tr> <td></td><td></td></tr> </table>	5			
1	2								
3	4								
5									
Monitor 1	Monitor 2								

2. **Parallel Mode:** This mode allows the same cameras simultaneously pop up on different monitors. This is suggested to be used when multiple monitors are placed in separate rooms.

Example:

Camera 1, Camera 2, Camera 3 and Camera 4 are assigned for pop-up alert on both Monitor 1 and Monitor 2. When the four cameras are triggered at the same time, they will show up simultaneously on both Monitor 1 and Monitor 2.

<table border="1"> <tr> <td>1</td><td>2</td></tr> <tr> <td>3</td><td>4</td></tr> </table>	1	2	3	4	<table border="1"> <tr> <td>1</td><td>2</td></tr> <tr> <td>3</td><td>4</td></tr> </table>	1	2	3	4
1	2								
3	4								
1	2								
3	4								
Monitor 1	Monitor 2								

3.12.5 Setting Live View with Pop-up Alert

You can set a different live view mode with pop-up alert together for each monitor. When alert events occur, the live video of the associated camera will pop up on the assigned monitor to replace its live view mode.

1. To configure live view mode, follow the instructions in *3.11.2 Setting Live View*.
2. To configure pop-up alert, in the upper left column, click **Event Popup**. Figure 3-37 appears.
3. Configure **Motion Trigger**, **I/O Trigger**, **Popup Dwell Time** and **Popup Interruption Interval** for each monitor. For details see *3.11.4 Setting Pop-up Alert*.
4. Click the **Matrix** icon and return to Figure 3-48. Ensure the **Live Mode** option is selected.
5. Click **OK**. The live view mode you configured for each monitor is displayed.
6. Start monitoring. When alert events occur, the associated camera will pop up on the desired monitor.

3.13 System Restoration

3.13.1 Restoring System

You can restore preinstalled files once they are damaged by running the recovery from the hidden partition. To restore the operating system and all preinstalled software, follow the steps below.

Note: After recovery, you need to re-install all settings and passwords. But the recovery will not delete your recording files saved in the other partitions since it only reformats the partition C.

1. On the GV-Desktop, click the **Program List** button and select **Recovery**. The system will run this command by itself.

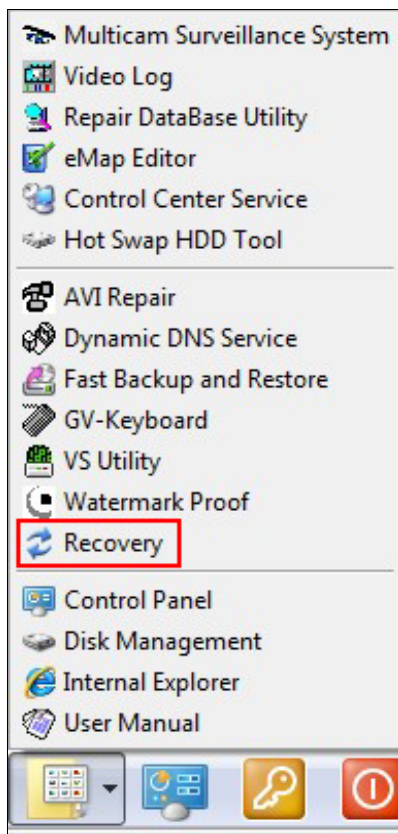


Figure 3-51

2. Restart the Windows and press **F11** button several times to avoid accessing the GV-Tower DVR/NVR/VMS System V2 .

3. When the below screen appears, click the **Recovery** button. After recovery, click **Quit** and then **OK** to restart the Windows.



Figure 3-52

For the recovery system part, see steps 1 ~ 8 in 3.3 *Windows Setup Installation*.

3.13.2 Configuring GV-Tower DVR System V2 for PAL

The default video standard after recovery is set to NTSC. If the video standard in your country is PAL, remember to configure the GV-Tower DVR/NVR System V2 for PAL after recovery.

1. Click the **Configure** button, point to **A/V Setting**, and then select **Video Source**.

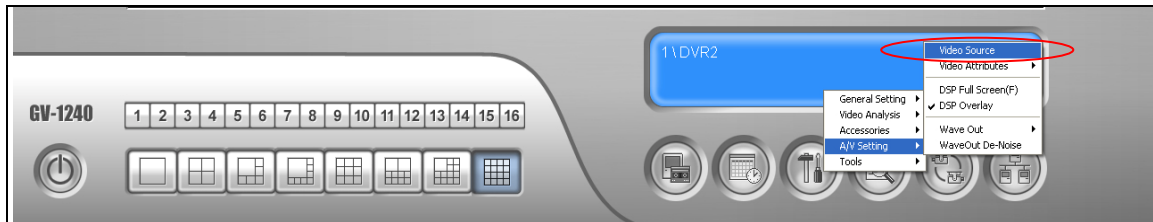


Figure 3-53

2. In the Video Standard field, select **PAL** from the drop-down list, and click **OK**.

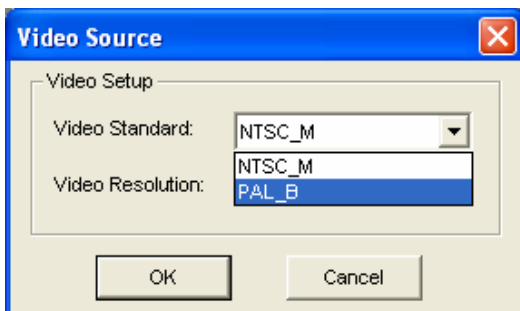


Figure 3-54

3.14 Updating GV-Tower System V2

If you like to update your GV-Tower DVR/NVR/VMS System V2, contact your dealer for more information.

Before contacting your dealer, you may check software update news at our website:

<http://www.geovision.com.tw>

Chapter 4 Health Analysis

GeoVision offers health analysis to GV-Tower DVR/NVR/VMS System V2. The service is intended to give diagnosis for early and immediate detection of problems.

It is recommended to have the health analysis during the first week after you install the GV-Tower DVR/NVR/VMS System V2, and then have the checkup every three months. It will take 5 working days for response.

Please prepare the following data for analysis, and send to dvrssystem@geovision.com.tw

- **System Settings**
- **System Log**
- **Information of your computer system (Processor; Drives; Voltage, Temperature and Fans)**

4.1 System Settings

Please back up your system configurations using the **Fast Backup and Restore** application.

1. Run **Fast Backup & Restore Main System** from the Start menu.

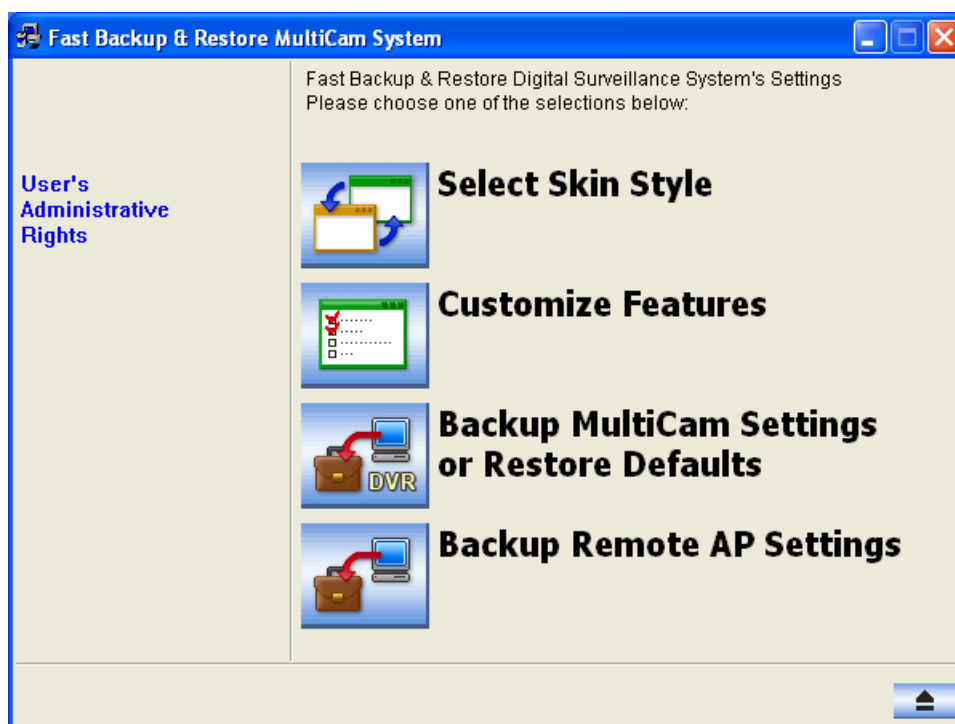


Figure 4-1

2. Select **Backup MultiCam Settings or Restore Defaults**, and select **Backup Current System**. This dialog box appears.

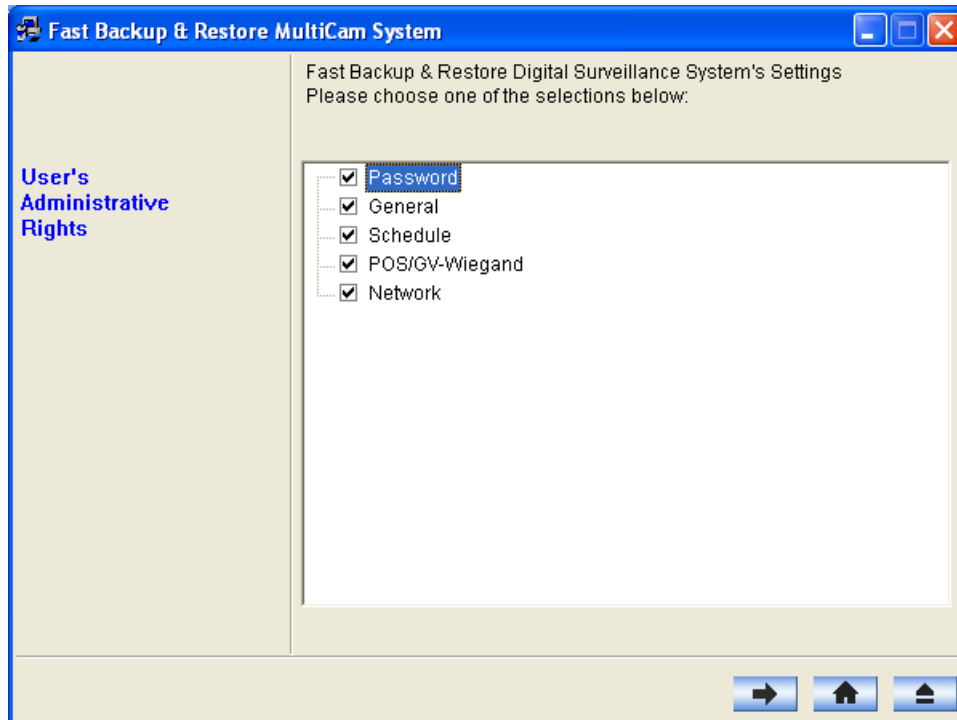



Figure 4-2

3. Press the **Next Step** button  to back up all your system settings. The Save As dialog box appears.
4. Select the destination drive to store the backup file. When the backup is complete, this message "*Successfully Backup MultiCam System Settings*" will appear.

4.2 System Log

Please provide the **sys*.mdb** files of system log. The files by default are saved at **C:\GV folder\database** (GV-Tower DVR/NVR System V2), or **C:\Log\Database** (GV-Tower VMS System V2). If you have modified the default location, you can check the path by the following steps:

1. System Log Setting:

- GV-Tower DVR/NVR System V2: Click the **Configure** button on the Main System, select **System Configure**, and then select **System Log Setting**. This dialog box appears.

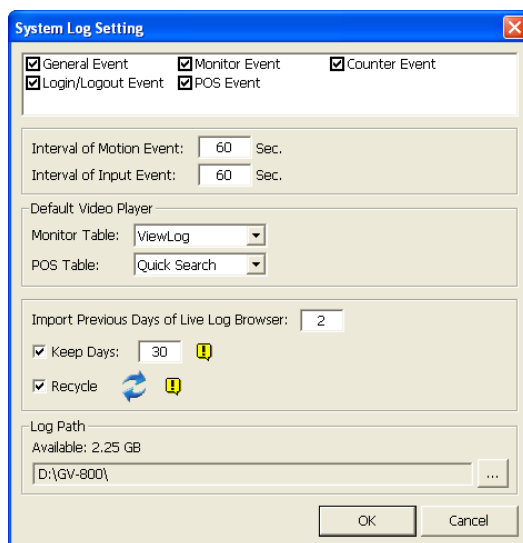


Figure 4-3

- GV-Tower VMS System V2: Click **ViewLog** button, select **Toolbar**, select **Configure**, and then select **System Log Setting**. This dialog box appears.

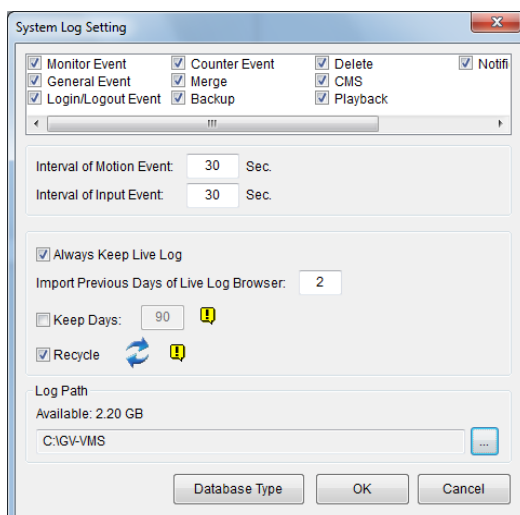



Figure 4-4

2. The location of your system log is listed after **Log Path**.

4.3 Information of Your Computer System

To get the information of your computer system, please follow the steps below to install the free software PC WIZARD. By using the software, the following computer information can be easily collected and saved for analysis:

- **Processor:** includes Type, Frequency, Data Cache L1, Trace Cache L1, Cache L2, Voltage, Processor Temperature, FPU Coprocessor.
- **Drives:** includes Number of Hard Disk, Number of Drive, Total Size and Free Space of Drive.
- **Voltage, Temperature and Fans:** includes Monitoring Chip, Voltage CPU, Chassis Fan, Processor Temperature, Mainboard Temperature, Hard Disk Temperature.

1. Download and install **PC WIZARD** from <http://www.cpubid.com/pcwizard.php> .
2. After installation, run the program.
3. Right-click the **Processor** icon  and click **Save as**.

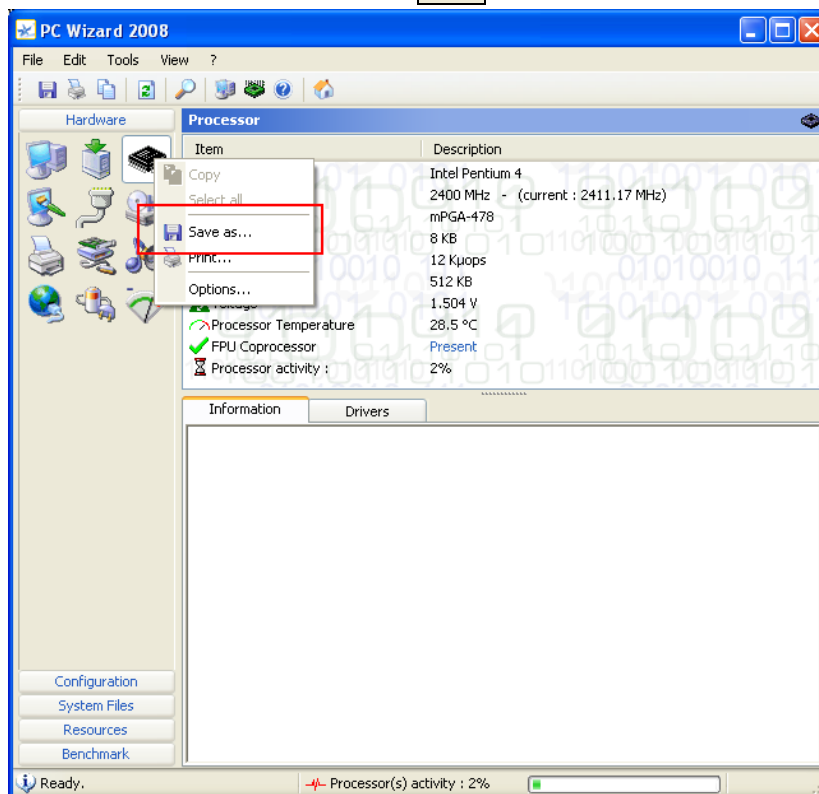


Figure 4-4

4. In the Save As dialog box, select **Format HTML** and click **OK**.

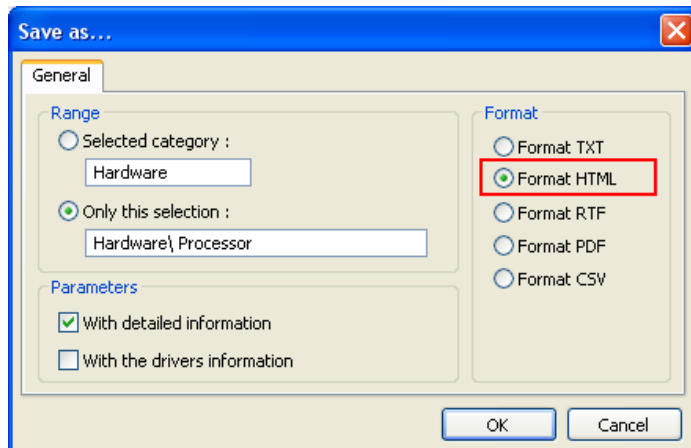




Figure 4-5

5. Select the Save location, type the file name, and then click **Save** to save the Processor information as HTML file.
6. Repeat Steps 3-5 to save the **Drives** information  as HTML file.
7. To save the **Voltage, Temperature and Fans** information , please follow these steps:
 - A. Click the **Voltage, Temperature and Fans** icon. The related data is displayed at the right window.
 - B. Click the first item **Monitoring Chip**.
 - C. Click **Edit** on the menu bar and click **Select All** to highlight all the contents.
 - D. Click **Edit** on the menu bar and select **Copy**.
 - E. Open a Notepad. Paste and save the information to TXT file.

4.4 Health Analysis Form

Please send the related data for analysis along with this Health Analysis Form to dvrssystem@geovision.com.tw.

Health Analysis of GV-Tower DVR/NVR/VMS System V2	
Contact Person:	Title:
Company Name:	
Telephone: (O)	(H)
Fax:	
E-Mail:	
Model:	
Bar Code:	

4.5 Check List

Read this check list before submitting the health analysis request:

- System Settings- **EXE file**
- System Log- **sys*.mdb**
- Computer System- Processor information of **HTML file**
- Computer System- Drives information of **HTML file**
- Computer System- Voltage, Temperature and Fans information of **TXT file**
- Health Analysis Form

Chapter 5 Troubleshooting

GV-Tower DVR/NVR/VMS System V2 stops responding (aka “crashed” or “froze”).

If your GV-Tower DVR/NVR/VMS System V2 is not responding to your clicking, typing, or mouse movements, try these steps to get your GV-Tower DVR/NVR/VMS System V2 back on track. Please note that you will lose any unsaved changes in all open applications.

1. Restart your GV-Tower DVR/NVR/VMS System V2 by pressing the **Reset** button on the front panel.
2. If your GV-Tower DVR/NVR/VMS System V2 is still unresponsive, press the **Power** button to shut it down. Wait 30 seconds and then restart your GV-Tower DVR/NVR/VMS System V2.

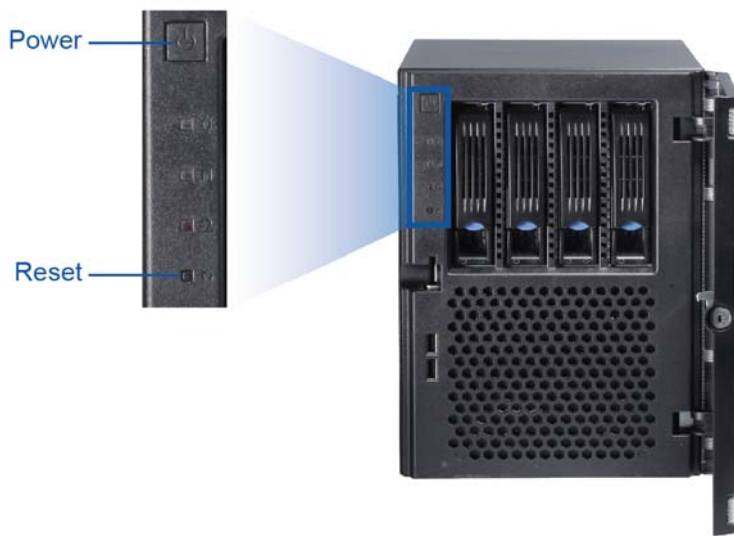


Figure 5-1

GV-Tower DVR/NVR/VMS System V2 hard disk corrupts.

If you are experiencing file system corruption problems, such as lost clusters, cross-linked files or invalid files or directories, try these steps:

1. Use the **HD Tune** utility to scan the hard disk for errors. Follow these steps:
 - A. Download and install **HD Tune** from <http://www.hdtune.com/>
 - B. Click the **Error Scan** tab and click **Start** to scan. Any found defects will be shown as red blocks as below.

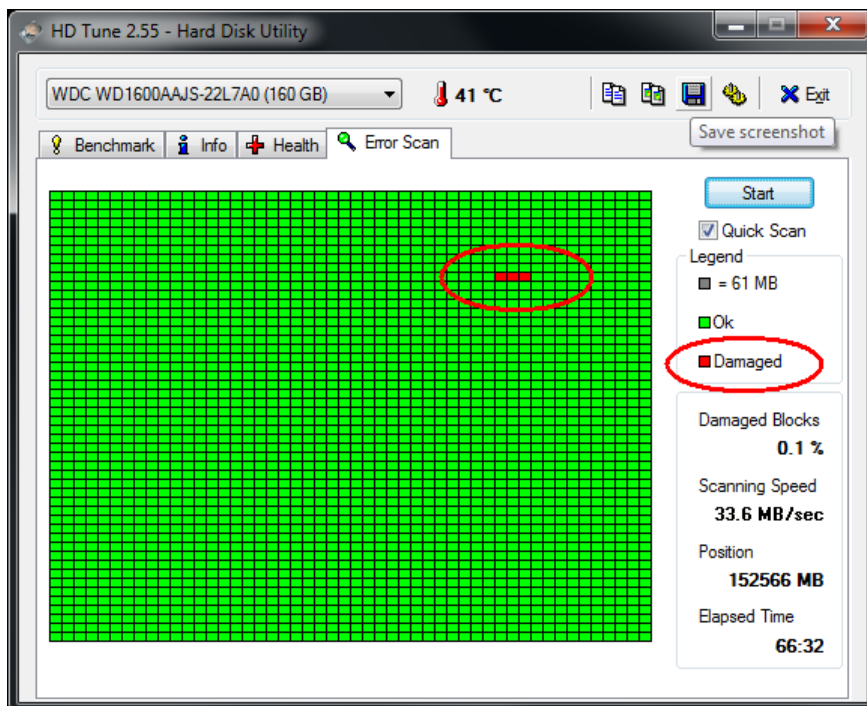


Figure 5-2

- C. If your hard disk drive is damaged, replace a new one.

2. If the HD Tune utility does not find any defects, use the Windows built-in utility to attempt to fix the errors. Follow these steps:

- A. On the GV-Desktop, click the **Programs** button, and select **Disk Management**. See Figure 3-9.
- B. Right-click the desired hard disk and select **Properties** from the file menu to display the Properties window.

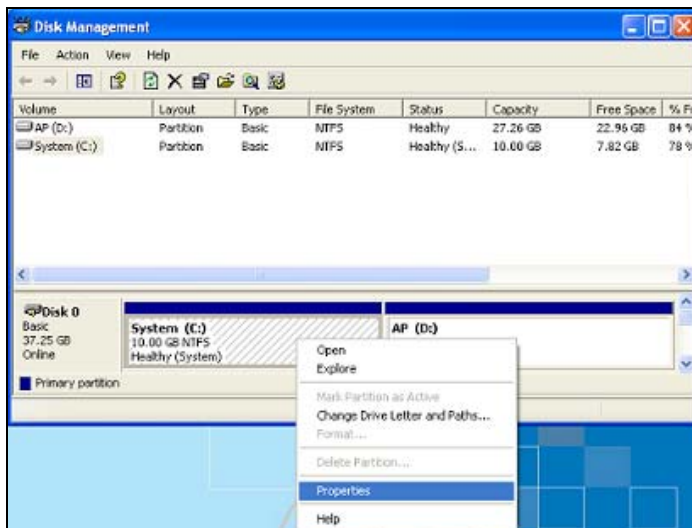


Figure 5-3

- C. Click the **Tools** tab in the upper portion of the window.
- D. Under Error-checking, click the **Check Now** button.

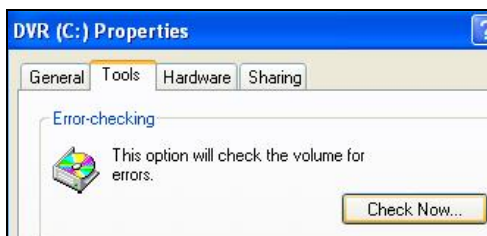


Figure 5-4

- E. Select **Automatically fix file system errors** and **Scan for and attempt recovery of bad sectors**.

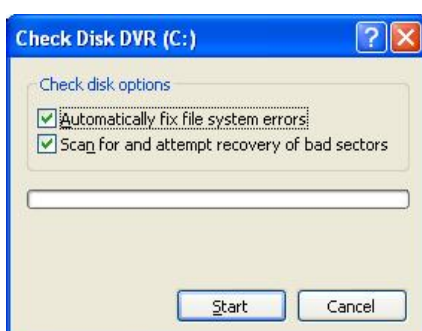


Figure 5-5

- F. Click **Start**.

3. If the problem persists, replace a hard disk drive.

GV-Tower DVR/NVR/VMS System V2 suffers virus attack.

GV-Tower DVR/NVR/VMS System V2 is designed and optimized for Windows 7 platform. It may be vulnerable to newly created worms and exploits that attack any of the underlying operating system's previously undocumented flaws. If your GV-Tower DVR/NVR/VMS System V2 suffers virus attack, try restoring the operating system and GV-System Software by using the Recovery. Refer to *3.13.1 Restoring System*.

GV-Tower DVR System V2 has video and/or audio lost.

If your GV-Tower DVR System V2 fails to show video, audio or both, try these steps:

1. Check the video/audio connection. Make sure one end of the LFH audio & video cable is securely connected to the video/audio device, and the other end to the video/audio port of the GV-Tower DVR System V2.
2. Make sure the video/audio device is turned on.
3. Switch the cable from the functional channel to the non-functional channel, and vice versa. If the previously non-functional channel is now able to deliver video/audio, you should check the video/audio device itself and its related cables.

The screen image appears distorted or jitters.

If the screen image seems to be distorted, jitter, or not to look right, try these steps:

1. Make sure the video standard in your country matches the setting in the GV-Tower DVR/NVR System V2. Refer to *3.13.2 Configuring GV-Tower DVR System V2 for PAL*.
2. Make sure the camera and its cable are not damaged or frayed. Try to replace a camera or camera cable to see if this fixes the problem.

How can I find more help?

1. Visit our website at http://www.geovision.com.tw/english/4_1.asp
2. Write us at dvrssystem@geovision.com.tw

Specifications

GV-Tower DVR/NVR/VMS System V2

Hardware

System		
CPU		Intel Core i3 Processor Intel Core i5 Processor (optional)
RAM		4 GB Dual Channels
No. of HDD		4 (3.5" HDD)
Internal Storage		64 GB SSD
OS		64-bit Windows Embedded OS
DirectX		11
Power		250 W, 110-115 V, 60 Hz 250 W, 220-230 V, 50 Hz
Connector	Ethernet	RJ-45, 10 / 100 / 1000 Mbps x 2
	Video Output	VGA, DVI-D and HDMI
	USB 2.0	Front: 2 ports Rear: 4 ports
	USB 3.0	Rear: 2 ports
Environment		
Operating Temp.		0 ~ 45 °C / 32 ~ 113 °F
Humidity		0 ~ 80% RH (non-condensing)
Physical		
Color		Silver
Dimensions (W x H x D)		200 x 270 x 335 mm / 7.87 x 10.63 x 13.19 in
Net Weight		8 kg / 17.64 lb (± 1 kg / 2.2 lb)
Sensor and Alarm (Optional)		
GV-IO Box 4 Ports		4 inputs, 4 outputs
GV-IO Box 8 Ports		8 inputs, 8 outputs
GV-IO Box 16 Ports		16 inputs, 16 outputs

Software

Video and Audio		
Model	GV-Tower DVR System V2	
Video Standard	NTSC, PAL	
Video Input	16 channels (analog) and up to 32 channels (IP) (Max. 32 channels)	
Video Input Level	1.0 Vp-p ($\pm 10\%$) composite, 75 Ω	
Audio Input	16 channels (analog) and up to 32 channels (IP) (Max. 32 channels)	
Audio Input Level	0.5 ~ 1 Vp-p composite	
Video Compression Format	HW: H.264 SW: Geo MPEG4, Geo H.264, MJPEG	
Display Rate (Max)	NTSC	480 FPS
	PAL	400 FPS
Recording Rate (Max)	NTSC	HW: 480 (D1)
	PAL	HW: 400 (D1)
Video Resolution	NTSC	HW: 704 x 480 SW: 352 x 240
	PAL	HW: 704 x 576 SW: 352 x 288
Video and Audio		
Model	GV-Tower NVR System V2 (GV)	GV-Tower NVR System V2 (3 rd Party)
Video Input	32 channels	32 channels in increments of 2 channels (license required)
Audio Input	32 channels	32 channels in increments of 2 channels (license required)
Video and Audio		
Model	GV-Tower VMS System V2 (GV)	GV-Tower VMS System V2 (3 rd Party)
Video Input	32 channels	32 channels in increments of 1 channel (license required)
Audio Input	32 channels	32 channels in increments of 1 channel (license required)
Note: It is required to enable the dual-stream function on GeoVision and third-party IP cameras to have the maximum number of channels supported.		

Live View and Playback	
Image Control	Contrast / Brightness / Saturation / Hue
Recording Mode	Round the Clock / Motion Detection / Sensor Detection / Pre & Post Recording / Schedule Recording
Pre Recording	1~ 45 min.
Instant Playback	10 sec. / 30 sec. / 1 min. / 5 min.
Watermark	Supported
Search and Backup	
Search Method	Date / Time / Camera / Event Type
Backup Type	DVD+R (DL) / DVD-R (DL) / DVD+R / DVD+RW / DVD-R / DVD-RW / CD-R / CD-RW
Note: For backup function, you need to connect an external USB DVD/CD burner.	
Remote Monitoring	
Monitoring Environment	Web browser (IE, Chrome, Firefox and Safari) Mobile device (Android Smartphone and tablet; iPad, iPhone and iPod Touch)
Live View	Max. 32-channel multi views, up to 200 channels connection to GV-Tower System V2
Network Type	LAN, WAN, Internet
System Monitoring and Recovery	
Power Restoration	Automatic restart after power outage
Monitoring	Two independent Watchdogs (Hardware Watchdog + Software Watchdog)
Recovery	Automatic system rebuild from internal SSD.

Language		
Model	GV-Tower DVR/NVR System V2	GV-Tower VMS System V2
Type	Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish	Bulgarian / Czech / Danish / English / French / German / Greek / Hebrew / Hungarian / Italian / Japanese / Persian / Polish / Portuguese / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Traditional Chinese / Turkish
Software License		
Model	GV-Tower DVR/NVR System V2	GV-Tower VMS System V2
Free License	32 channels from GV-IP devices	
Maximum License	32 channels from third-party IP devices	
Increment for Each License	1 to 32 third-party IP cameras in increments of 2	1 to 32 third-party IP cameras in increments of 1
Optional Combinations	N/A	
Dongle Type	Internal	
Note: The Maximum License is a paid service.		

*All specifications are subject to change without notice.

Appendix

A. Hard Disk Requirements

The total of recording frame rates that you can assign to a single hard disk is listed as below:

Frame rate limit in a single hard disk when connecting to analog cameras

Analog Cameras / SW Compression		
Video Resolution	MPEG4	
	NTSC	PAL
CIF	960 FPS	800 FPS
VGA/D1	480 FPS	400 FPS

Analog Cameras / HW Compression		
Video Resolution	H.264	
	NTSC	PAL
D1	480 FPS	400 FPS

Frame rate limit in a single hard disk when connecting to IP cameras

IP Cameras				
Video resolution	H.264		MJPEG	
	Frame Rate	Bitrate	Frame Rate	Bitrate
5 MP (2560 x 1920)	220 FPS	8.5 Mbit/s	80 FPS	30.4 Mbit/s
4 MP (2048 x 1944)	330 FPS	10.4 Mbit/s	105 FPS	40.53 Mbit/s
3 MP (2048 x 1536)	440 FPS	9.83 Mbit/s	140 FPS	38.67 Mbit/s
2 MP (1920 x 1080)	660 FPS	12.59 Mbit/s	210 FPS	44.93 Mbit/s
1.3 MP (1280 x 1024)	660 FPS	6.16 Mbit/s	300 FPS	32.26 Mbit/s

Frame rate limit in a single hard disk when connecting to SDI cameras

Hardware Compression		
Video Resolution	H.264	
	NTSC	PAL
1080p	360 FPS	300 FPS
1080i	360 FPS	300 FPS
720p	720 FPS	600 FPS

Note: The above data was determined using the bitrate listed above and hard disks with average R/W speed above 110 MB/s.

B. Total Frame Rate and Max. No. of Channels Supported

Below are the total frame rates GV-Tower DVR/NVR/VMS System V2 can support with CPU usage of approximately 70% to ensure performance and stability. You could connect up to 32 cameras to the system. See the below charts to calculate frame rate for connected IP cameras.

For instance, if you connect 10 units of GV Fisheye 1.3 MP cameras to GV-Tower DVR System V2 supporting CPU Intel Core i3 Processor, you will receive 18 fps for each channel (180 fps / 10 units = 18 fps).

For GV IP Cameras (Dual Streams)

- GV-Tower DVR/NVR System V2

Video Resolution	Dual Streams		Max. FPS	Intel Core i3 / i5	
	Stream 1 (H.264)	Stream 2 (H.264)		Total FPS	Full-Frame Channels
1.3 MP	1280 x 1024	320 x 256	30 fps	960 fps	32 ch
2 MP	1920 x 1080	448 x 252	30 fps	960 fps	32 ch
3 MP	2048 x 1536	320 x 240	20 fps	640 fps	32 ch
5 MP	2560 x 1920	320 x 240	10 fps	320 fps	32 ch

- GV-Tower VMS System V2

Video Resolution	Dual Streams		Max. FPS	Intel Core i3 / i5	
	Stream 1 (H.264)	Stream 2 (H.264)		Total FPS	Full-Frame Channels
1.3 MP	1280 x 720 / 1280 x 1024	448 x 252 / 320 x 256	30 fps	960 fps	32 ch
2 MP	1920 x 1080	448 x 252	30 fps	960 fps	32 ch
3 MP	2048 x 1536	320 x 240	20 fps	640 fps	32 ch
5 MP	2560 x 1920	320 x 240	10 fps	320 fps	32 ch

For GV Fisheye Cameras (Single Stream De-warping)

- **GV-Tower DVR/NVR System V2**

Video Resolution	Single Stream (H.264)	Max. FPS	Intel Core i3		Intel Core i5	
			Total FPS	Full-Frame Channels	Total FPS	Full-Frame Channels
1.3 MP	1280 x 1200	15 fps	180 fps	12 ch	180 fps	12 ch
2 MP	1920 x 1080	15 fps	135 fps	9 ch	135 fps	9 ch
4 MP	2048 x 1944	15 fps	75 fps	5 ch	75 fps	5 ch
5 MP	2560 x 1920	10 fps	60 fps	6 ch	60 fps	6 ch

- **GV-Tower VMS System V2**

Video Resolution	Single Stream (H.264)	Max. FPS	Intel Core i3		Intel Core i5	
			Total FPS	Full-Frame Channels	Total FPS	Full-Frame Channels
1.3 MP	1280 x 1200	15 fps	195 fps	13 ch	210 fps	14 ch
2 MP	1440 x 1376	15 fps	150 fps	10 ch	165 fps	11 ch
4 MP	2048 x 1944	15 fps	75 fps	5 ch	90 fps	6 ch
5 MP	2560 x 1920	10 fps	60 fps	6 ch	70 fps	7 ch

For Third-Party IP Cameras (Single Stream GPU Decode)

- **GV-Tower DVR/NVR System V2**

Video Resolution	Single Stream (H.264)	Max. FPS	Intel Core i3		Intel Core i5	
			Total FPS	Full-Frame Channels	Total FPS	Full-Frame Channels
1.3 MP	1280 x 1024	30 fps	960 fps	32 ch	960 fps	32 ch
2 MP	1920 x 1080	30 fps	780 fps	26 ch	870 fps	29 ch
3 MP	2048 x 1536	20 fps	540 fps	27 ch	560 fps	28 ch
4 MP	2048 x 1944	15 fps	405 fps	27 ch	465 fps	31 ch
5 MP	2560 x 1920	10 fps	280 fps	28 ch	310 fps	31 ch

- **GV-Tower VMS System V2**

Video Resolution	Single Stream (H.264)	Max. FPS	Intel Core i3		Intel Core i5	
			Total FPS	Full-Frame Channels	Total FPS	Full-Frame Channels
1.3 MP	1280 x 720 / 1280 x 1024	30 fps	930 fps	31 ch	960 fps	32 ch
2 MP	1920 x 1080	30 fps	750 fps	25 ch	960 fps	32 ch
3 MP	2048 x 1536	20 fps	440 fps	22 ch	580 fps	29 ch
4 MP	2048 x 1944	15 fps	255 fps	17 ch	390 fps	26 ch
5 MP	2560 x 1920	10 fps	160 fps	16 ch	240 fps	24 ch

C. Supported IP Devices

This list provides the supported IP device brands. For detailed information on the supported IP devices, refer to Supported IP Camera List on GeoVision's Website:

http://www.geovision.com.tw/english/4_21.asp

GeoVision
ACTi
Arecont Vision
AXIS
Bosch
Canon
CNB
D-Link
Etrovision
Hikvision
HUNT
IQinVision
JVC
MOBOTIX
Panasonic
Pelco
Samsung
Sanyo
SONY
UDP
Verint
VIVOTEK

Warranty Requirements

To validate your purchase, you shall complete the online Product Registration **within 30 days from the date of purchase** at http://www.geovision.com.tw/english/4_6.asp. Or click **GeoVision Online Registration** in My Favorite for a direct link.

If you fail to complete the Product Registration, the warranty period will start **from the date of shipment**.

Before you return the product

Some problems you experience may be related to software or the operating system. It is important to investigate other sources of assistance first. Before returning the product, try the following:

1. Review troubleshooting sections in the documentation for software and peripheral devices.
2. Try rebuilding the operating system and GV-System by using the Recovery DVD.
3. Consult your dealer. They are your best sources for current information and support. Or you can call or email GeoVision offshore offices for assistance.

When you call or e-mail, please inform us the following:

- Model name
 - Bar Code
 - Details of the defect or problem
 - Attempted solutions
 - Your contact information
 - Reseller's contact information
4. If you find it is the software problem, please check our website or your dealer for software updates.

Obtaining Warranty Service

If you are still unable to solve the problem and suspect that it is hardware related, follow these:

1. Send an e-mail to GeoVision to start Return Merchandise Authorization (RMA) process.
E-Mail: sales@geovision.com.tw or dvrssystem@geovision.com.tw
2. Securely pack the product in its original carton using the original packing material, or in equivalent packaging.
3. The product shall be returned to **GeoVision, Taiwan** at your expense for shipping and insurance costs.

BEFORE YOU DELIVER YOUR GV-TOWER DVR/NVR/VMS V2 SYSTEM FOR WARRANTY SERVICE, IT IS YOUR RESPONSIBILITY TO BACK UP YOUR DATA. YOU WILL BE RESPONSIBLE FOR REINSTALLING ALL DATA, SETTINGS AND PASSWORDS. DATA RECOVERY IS NOT INCLUDED IN THE WARRANTY SERVICE AND GEOVISION IS NOT RESPONSIBLE FOR DATA THAT MAY BE LOST OR DAMAGED DURING TRANSIT OR A REPAIR.

Warranty Form

Thank you for purchasing the GV-Tower DVR/NVR/VMS System V2. To help us validate your purchase and better serve you in the future, please go to

http://www.geovision.com.tw/english/4_6.asp or click **GeoVision Online Registration** in My Favorite for a direct link to register online **within 30 days from the date of purchase**. Please keep this copy for your records.

Name: First (given)		Surname (family name)	
Company Name (only if the product is owned by company):			
Mailing Address:			
City/Town:		Province/State:	
Country:		Postal Code:	
Telephone: (O)		(H)	
Fax:			
E-Mail:			
Date of Purchase: (e.g. 16-APR-2012)			
Product: <u>Please check the model and its items you purchased.</u>			
Model			
<input type="checkbox"/> GV-Tower DVR System V2		<input type="checkbox"/> GV-Tower NVR System V2	
<input type="checkbox"/> GV-Tower VMS System V2			
The system with third-party IP devices			
<input type="checkbox"/> 1 Channel	<input type="checkbox"/> 2 Channels	<input type="checkbox"/> 4 Channels	<input type="checkbox"/> 6 Channels
<input type="checkbox"/> 8 Channels	<input type="checkbox"/> 10 Channels	<input type="checkbox"/> 12 Channels	<input type="checkbox"/> 14 Channels
<input type="checkbox"/> 16 Channels	<input type="checkbox"/> 18 Channels	<input type="checkbox"/> 20 Channels	<input type="checkbox"/> 22 Channels
<input type="checkbox"/> 24 Channels	<input type="checkbox"/> 26 Channels	<input type="checkbox"/> 28 Channels	<input type="checkbox"/> 30 Channels
<input type="checkbox"/> 32 Channels			

Bar Code:

Shipment Date:

GeoVision, Inc.

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