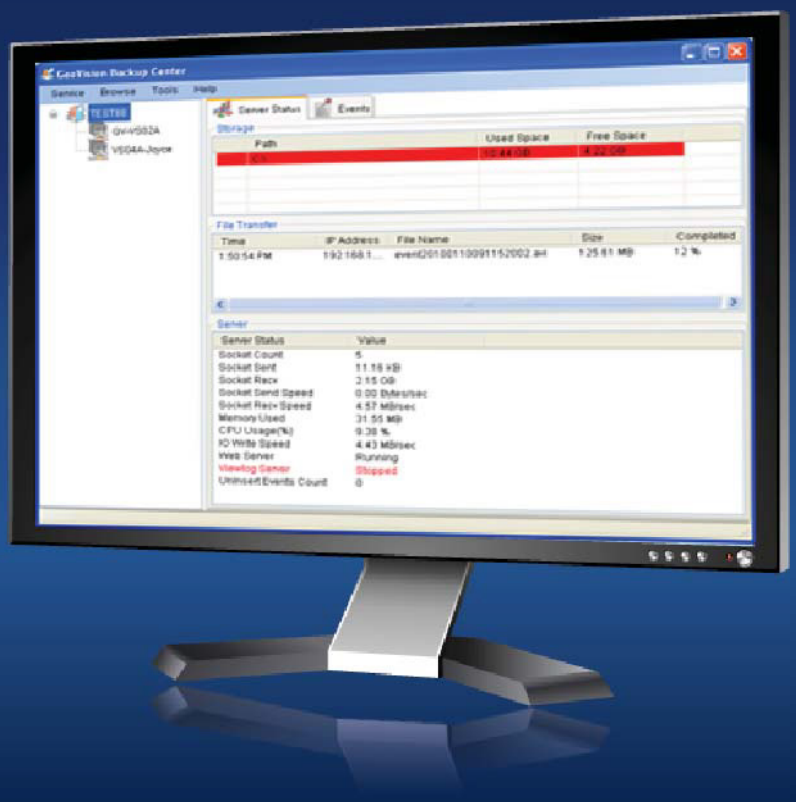
GeoVision inc
The Vision of Security

GV-Backup Center

User's Manual V1.2.1



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Scan the following QR codes for product warranty and technical support policy:

[Warranty]

[Technical Support Policy]

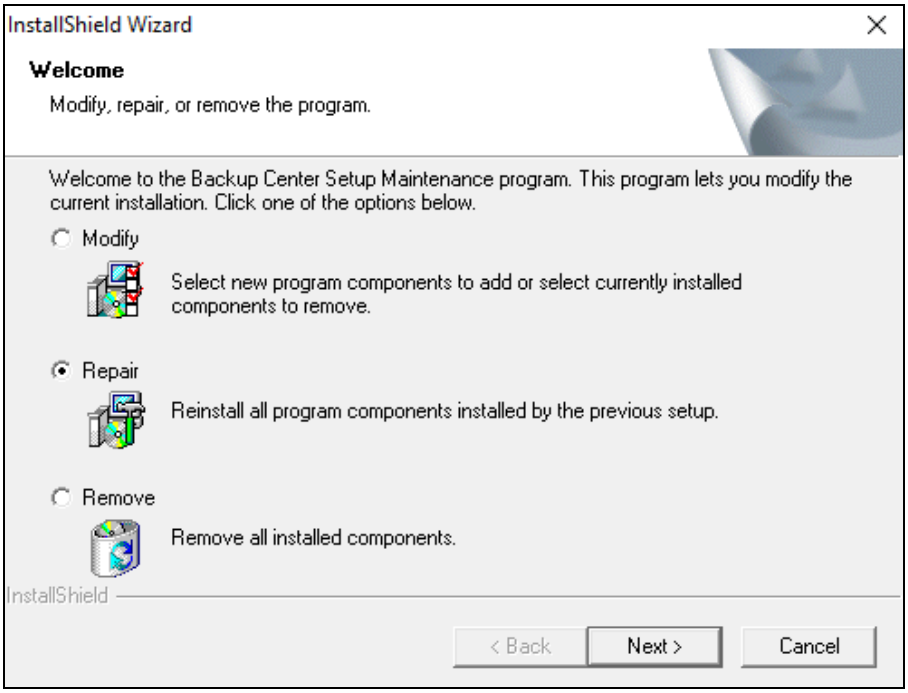
Contents

Naming and Definition

GV-DVR / NVR	Analog and Digital Video Recording Software. The GV-DVR / NVR also refers to **Multicam System**, **GV-NVR System**, **GV-Hybrid DVR System** and **GV-DVR System** at the same time.
GV-VMS	GeoVision Video Management System for IP cameras.
GV-Recording Server	GeoVision video streaming server designed for large-scale video surveillance deployments. It supports recording from IP devices and can distribute channels to GV-DVR / NVR, GV-GIS, GV-Mobile Server, GV-Control Center and GV-Multi View.
GV-Remote ViewLog	GeoVision viewing software that allows you to play back recorded Files remotely.

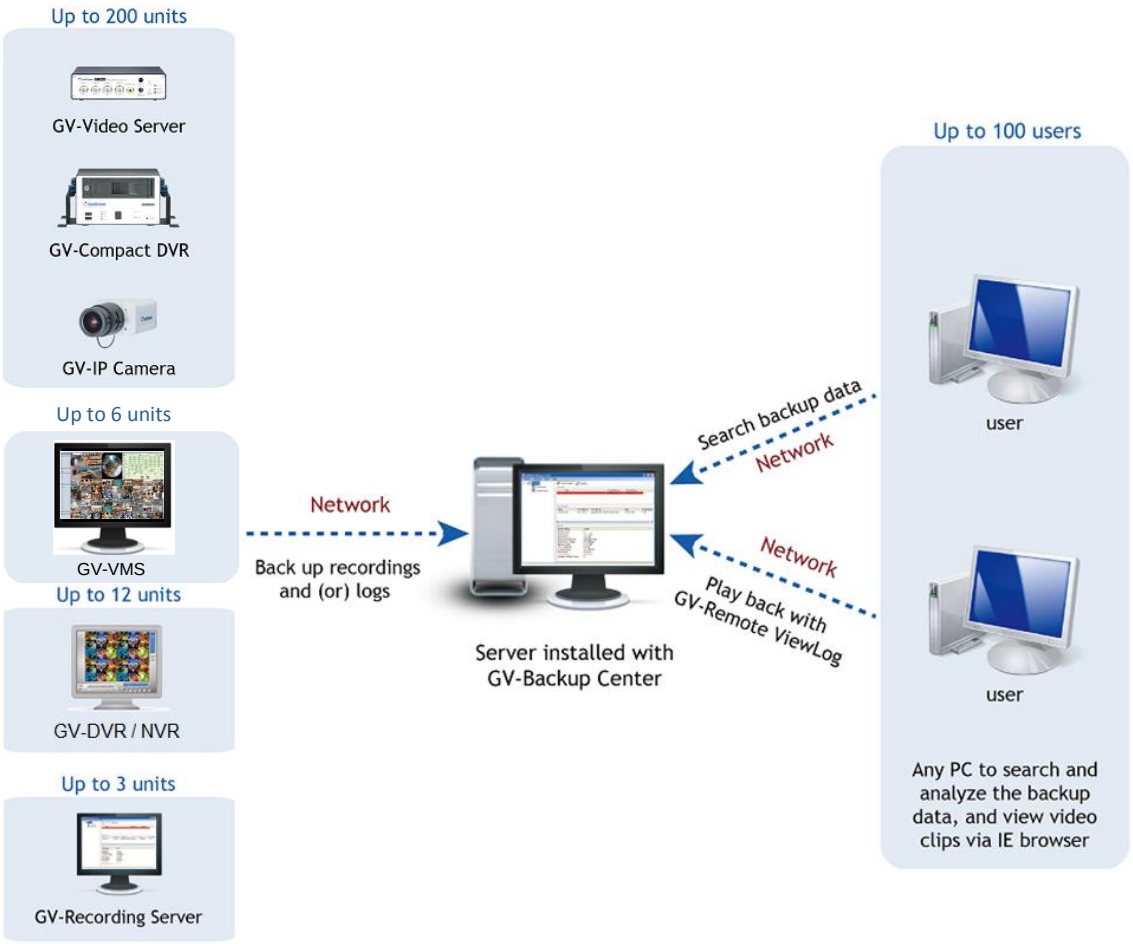
Note for Upgrading GV-Backup Center

To upgrade GV-Backup Center, run the Installer (Backup Center. exe) included in the latest software downloads from our website. Select **Repair** to start.



Chapter 1 Introduction

GV-Backup Center provides you with a secure and affordable remote backup solution for GV-DVR / NVR, GV-VMS, GV-Recording Server, and GV-IP Devices. GV-Backup Center automatically stores a copy of recordings and logs to an offsite location. If data are lost at the servers and devices, the recording data remain safe in a different location.



1.1 Features

- Remote backup
- Up to 200 units of GV-IP Devices supported
- Up to 12 units of GV-DVR / NVR supported (32 ch per unit)
- Up to 6 units of GV-VMS supported (64 ch per unit)
- Up to 3 units of GV-Recording Server supported (128 ch per unit)
- Up to 10 backup rules for working and non-working days independently for GV-DVR / NVR, GV-VMS and GV-IP Devices
- E-Mail alerts for low disk space, disconnection and file transfer failure
- Online data analysis by Event Counts, File Size and Time
- Failover support

1.2 Compatible GeoVision Software and IP Devices

Compatible GeoVision Software

Product	Software Version
GV-DVR / NVR	8.5.5 or later
GV-Recording Server	1.2.4 or later
GV-VMS	16.10.3 or later

Non-Compatible IP Devices

Except the following non-compatible IP Devices, the above mentioned GeoVision software, GeoVision IP cameras, Video Servers and Compact DVR all support GV-Backup Center.

Product	
GV-Box IP Camera	GV-BX2600
GV-Target Mini Fixed Dome	GV-EFD1100 Series
	GV-EFD2100 Series
	GV-EFD4700 Series
	GV-EFD2101
	GV-EFD3101
	GV-EFD5101
GV-Target Mini Fixed Rugged Dome	GV-EDR1100 Series
	GV-EDR2100 Series
	GV-EDR4700 Series
GV-Mini Fixed Rugged Dome	GV-ADR Series / GV-TDR Series
GV-Target Box Camera	GV-EBX1100 Series
	GV-EBX2100 Series
GV-Eyeball Dome	GV-EBD Series
GV-Target Vandal Proof IP Dome	GV-EVD2100
	GV-EVD3100
	GV-EVD5100
GV-Vandal Proof IP Dome	GV-AVD Series / GV-TVD Series
	GV-VD8700
GV-Target Bullet Camera	GV-EBL2101
	GV-EBL2111
	GV-EBL3101
GV-Bullet IP Camera	GV-ABL Series / GV-TBL Series
GV-Speed IP Dome	GV-SD2322-IR
	GV-SD2722-IR
	GV-SD3732-IR
	GV-SD200-S
GV-Thermal IP Camera	GV-TM0100
GV-Virtual Reality IP Camera	GV-VR360

1.3 System Requirements

The following is minimum system requirements for the server to run the GV-Backup Center.

Minimum System Requirements

OS	64-bit Windows 10 / Server 2016
CPU	Core 2 Duo, E6600, 2.4 GHz
Memory	2 x 2 GB Dual Channels
Hard Disk	1 GB
DirectX	9.0c
Software	.Net Framework 3.5
Browser	Internet Explorer 7.x
Hardware	External or Internal GV-USB Dongle
Note: To download .Net Framework, see *Chapter 2 Installation*.	

Note: Considering of connection speed, we do not recommend using the mobile broadband connection, such as HSDPA, UMTS, EDGE, GPRS, GSM and etc., between GV-IP Devices and GV-Backup Center.

1.4 Network and HDD Requirements for GV-DVR / NVR, GV-VMS, and GV-IP Devices

The server's backup speed and transmitting capacity vary depending on the number of Gigabit connections. The number of Gigabit network cards required to receive 200 GV-IP Devices and to support remote access of backed up data are listed below according to the resolution of the source video.

Also note the maximum number of hosts supported by a single hard disk to calculate the number of hard disks required.

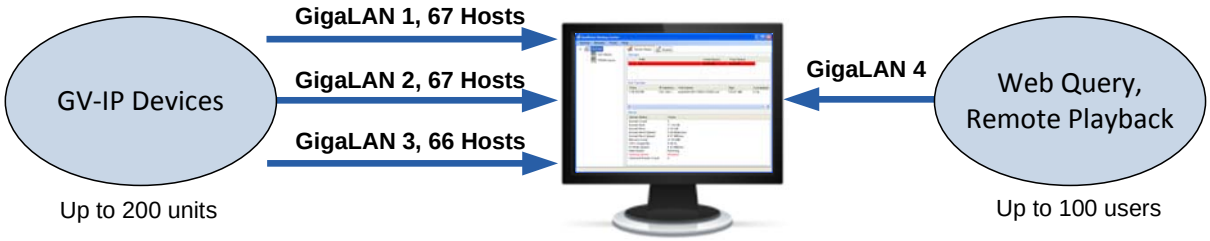
Resolution	FPS	Codec	Gigabit Network Cards Required		Max. hosts per HDD
			Receiving 200 GV-IP Devices	For Playback / Web Query access	
1.3 MP	30 fps	H.264	Gigabit network card x 2 (up to 100 hosts per card)	Gigabit Network Card x 1	32 hosts
2.0 MP	30 fps	H.264	Gigabit Network Card x 3 (up to 67 hosts per card)	Gigabit Network Card x 1	21 hosts
3.0 MP	20 fps	H.264	Gigabit network card x 2 (up to 100 hosts per card)	Gigabit Network Card x 1	32 hosts
4.0 MP	15 fps	H.264	Gigabit Network Card x 3 (up to 67 hosts per card)	Gigabit Network Card x 1	24 hosts
5.0 MP	10 fps	H.264	Gigabit Network Card x 3 (up to 67 hosts per card)	Gigabit Network Card x 1	24 hosts

The deployment of Gigabit connections for backing up and accessing database is suggested as illustrated below. Ensure to run every Gigabit connection on a different network in order to reduce the lag on any network connection.

1 MP / 3 MP Source Video

Server installed with GV-Backup Center +
3 Network Cards assigned on different networks

2 MP / 4 MP / 5 MP Source Video



Server installed with GV-Backup Center +
4 Network Cards assigned on different networks

1.5 Requirements for Connecting to GV-Recording Server

When GV-Backup Center connects with GV-Recording Server, it will back up the recordings of all the channels connected to the GV-Recording Server. Each GV-Backup Center supports up to 3 units of GV-Recording Server, with each GV-Recording Server being connected under an independent LAN.

Hard Disk Requirements for Receiving Data from GV-Recording Server

To back up all 128 channels of recordings from GV-Recording Server, it is recommended to install the following numbers of hard disks in the server of GV-Backup Center, in addition to the 1 hard disk used for installing GV-Backup Center.

Number of GV-Recording Server	Data Size / Ch	Total Size	Recommended HDD requirements In GV-Backup Center	Time required to transfer all files
1 unit (128 ch)	162 MB	20736 MB	1 TB 7200RPM HDD x 2 (SATA3)	03:10 min
2 units (256 ch)	162 MB	41472 MB	1 TB 7200RPM HDD x 3 (SATA3)	03:37 min
3 units (384 ch)	162 MB	62208 MB	1 TB 7200RPM HDD x 5 (SATA3)	04:18 min

Note:

1. The results were obtained using SATA3 hard disks with an average write speed of 100 MB/s.
2. The results were obtained with video clip time set to 5 minutes. If the time required to transfer all files exceeds the clip time, file transferring to GV-Backup Center may not be able to keep up with recording.

Maximum Bit Rate Supported by GV-Recording Server (based on 128 Ch)

To back up the recordings of 128 channels, it is required to meet the maximum bit rate supported by the GV-Recording Server and the maximum number of channels assigned to a single hard disk.

Bit Rate unit: Mbps

Res.	Codec	Clip Time	Bit Rate / Ch	Round-the-Clock and Motion Detection	
				Max. Ch per HDD in GV-Recording Server	Recommended HDD requirements
1.3 MP	H.264	1 min	5.39	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)
		5 min	5.82	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)
2.0 MP	H.264	1 min	5.33	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)
		5 min	5.96	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)
3.0 MP	H.264	1 min	5.4	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)
		5 min	5.9	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)

Maximum Channels Supported by GV-Recording Server (based on 30 fps)

To back up the recordings with full 30 fps, it is required to meet the maximum number of channels supported by the GV-Recording Server and the maximum number of channels assigned to a single hard disk.

Res.	Codec	Clip Time	FPS	Total Ch	Round-the-Clock and Motion Detection	
					Max. Ch per HDD in GV-Recording Server	Recommended HDD requirements
1.3 MP	H.264	1 min	30	108	6 Ch	1 TB 7200RPM HDD x 18 (SATA3)
		5 min	30	113	6 Ch	1 TB 7200RPM HDD x 19 (SATA3)
2.0 MP	H.264	1 min	30	56	3 Ch	1 TB 7200RPM HDD x 19 (SATA3)
		5 min	30	59	3 Ch	1 TB 7200RPM HDD x 20 (SATA3)
3.0 MP	H.264	1 min	30	78	4 Ch	1 TB 7200RPM HDD x 20 (SATA3)
		5 min	30	80	4 Ch	1 TB 7200RPM HDD x 20 (SATA3)

For details on connecting the GV-Recording Server, see *3.5 Connecting GV-Recording Server*.

1.6 Requirements for Connecting to GV-VMS

When GV-Backup Center connects with GV-VMS, it will back up the recordings of all the channels connected to the GV-VMS. Each GV-Backup Center supports up to 6 units of GV-VMS, with each GV-VMS being connected under an independent LAN.

Maximum Bit Rate & Channels supported by GV-VMS (based on 64 ch)

Bit rate affects the data size. The higher the bit rate is, the bigger the data size will be; thus, the time required to transfer files to GV-Backup Center will also be longer. The chart below shows the maximum number of channels that can be assigned to one HDD in GV-VMS in order to transfer all files to GV-Backup Center within 5 minutes.

Res.	Clip Time	FPS	Bit Rate / Ch	Data Size / Ch	Total Size	Round-the-Clock and Motion Detection		Time required to transfer all files
						Max. Ch per HDD in GV-VMS	Recommended HDD requirements	
1.3 MP	5 min	30	5.17 Mbps	199 MB	12736 MB	22 Ch	1 TB 7200RPM HDD x 3 (SATA3)	02:30 min
2.0 MP	5 min	30	6.94 Mbps	261 MB	16704 MB	22 Ch	1 TB 7200RPM HDD x 3 (SATA3)	03:10 min
3.0 MP	5 min	20	9.14 Mbps	350 MB	22400 MB	13 Ch	1 TB 7200RPM HDD x 5 (SATA3)	03:58 min
4.0 MP	5 min	15	11.74 Mbps	443 MB	28352 MB	7 Ch	1 TB 7200RPM HDD x 9 (SATA3)	04:26 min
5.0 MP	5 min	10	11.81 Mbps	443 MB	28352 MB	7 Ch	1 TB 7200RPM HDD x 9 (SATA3)	04:30 min
8.0 MP	5 min	25	12.98 Mbps	487 MB	31168 MB	7 Ch	1 TB 7200RPM HDD x 9 (SATA3)	04:52 min
12.0 MP	5 min	15	13.06 Mbps	490 MB	31360 MB	7 Ch	1 TB 7200RPM HDD x 9 (SATA3)	04:49 min

Note:

1. The results were obtained using SATA3 hard disks with an average write speed of 110 MB/s.
2. The results were obtained with video clip time set to 5 minutes. If the time required to transfer all files exceeds the clip time, file transferring to GV-Backup Center may not be able to keep up with recording.

1.7 Data Transfer Time between Different Network Types

When the data is transmitted from the GV-IP Devices to the GV-Backup Center, the data transfer time will vary between different network types.

The following test is conducted on the GV-Compact DVR V2 to transmit one-day data through WiFi wireless (802.11n) and 10/100 Ethernet LAN.

The test is based on these conditions:
GV-IP Device: GV-Compact DVR V2
Video Size: 720 x 480
Data Size: 81.92 mb
Data Amount for One Channel: 288 video clips / day

For the data transfer of one channel, the transfer time for Full Videos is *2 hr 24 min* through WiFi wireless, and *1 hr 16 min* through Ethernet LAN. If you select to transmit Compact Videos (key frames only), the transfer time is significantly reduced to *28 min 48 sec* through WiFi wireless and *19 min 12 sec* through Ethernet LAN.

For the data transfer of four channels, the transfer time for Full Videos is *8 hr 14 min* through WiFi wireless, and *5 hr 04 min* through Ethernet LAN. If you select to transmit Compact Videos (key frames only), the transfer time is significantly reduced to *1 hr 55 min* through WiFi wireless and *1 hr 16 min* through Ethernet LAN.

Network Type	Video Type	1 Ch / 1 Day	4 Ch / 1 Day
		Data Transfer Time	Data Transfer Time
WiFi (802.11n)	Full Videos	2 hr 24 min	8 hr 14 min
	Compact Videos	28 min 48 sec	1 hr 55 min
10/100 Ethernet	Full Videos	1 hr 16 min	5 hr 04 min
	Compact Videos	19 min 12 sec	1 hr 16 min

Note: To only transmit key frames to the GV-Backup Center, you should configure the **Compact Video** setting on the Web interface of GV-IP Devices (Figure 3-2).

Chapter 2 Installation

The GV-Backup Center program may be installed on a separate computer or the same computer with the GV-DVR / NVR or GV-VMS, but it is recommended to install on a dedicated computer.

Before installing the GV-Backup Center, you need to plug the **GV-USB Dongle** to the computer, and then install the **dongle driver** and **Microsoft .Net Framework**.

You can install the driver and the GV-Backup Center from Software DVD or GeoVision Website.

Downloading from Software DVD

1. Insert Software DVD to the computer. It runs automatically and a window appears.
2. To install USB driver, select **Install or Remove GeoVision GV-Series Driver** and click **Install GeoVision USB Devices Driver**.
3. To install .Net Framework 3.5, select **Download Microsoft .NET Framework 3.5**.
4. To install GV-Backup Center, select **Install GeoVision GV-Backup Center**.

Downloading from GeoVision Website

1. Go to the GeoVision website of GV-Backup Center to download and install the software.
2. To install USB driver, click **GV-Series Card Driver / GV-USB Devices Driver**.
3. To download and install .Net Framework 3.5, go to:

   http://www.microsoft.com/download/en/details.aspx?id=25150

Note: To install .Net Framework for Windows 10 or Windows Server 2016, see *Appendix B. Installing .Net Framework 3.5 for Windows 10 / Server 2016.*

Chapter 3 Getting Started

The GV-Backup Center is a dedicated computer on a network that stores backup copies of recordings from GV-DVR / NVR, GV-VMS, GV-Recording Server, and GV-IP Devices. The GV-Backup Center allows you to access those backup data anywhere through a Web browser.

3.1 Starting the GV-Backup Center

To start the GV-Backup Center, follow these steps:

1. Run **GV-Backup Center**. The first-time user will be prompted to enter a password. The default login account is **admin** and password is left blank.

Figure 3-1

2. On the GV-Backup Center window, click **Service** from the menu bar and select **Start all services** to store backup data from connected GeoVision software and IP devices.

3.2 Connecting GV-IP Devices

You need to configure the GV-IP Devices in order to back up data to the GV-Backup Center remotely over a network. Different backup schedules are definable on each GV-IP Devices.

You can also configure up to two GV-Backup Centers in case of the primary center failure. Whenever the primary GV-Backup Center fails, the second GV-Backup Center takes over the connection from GV-IP Devices, providing uninterrupted backup services.

1. Access the Web interface of GV-IP Devices, and select **Backup Center**.

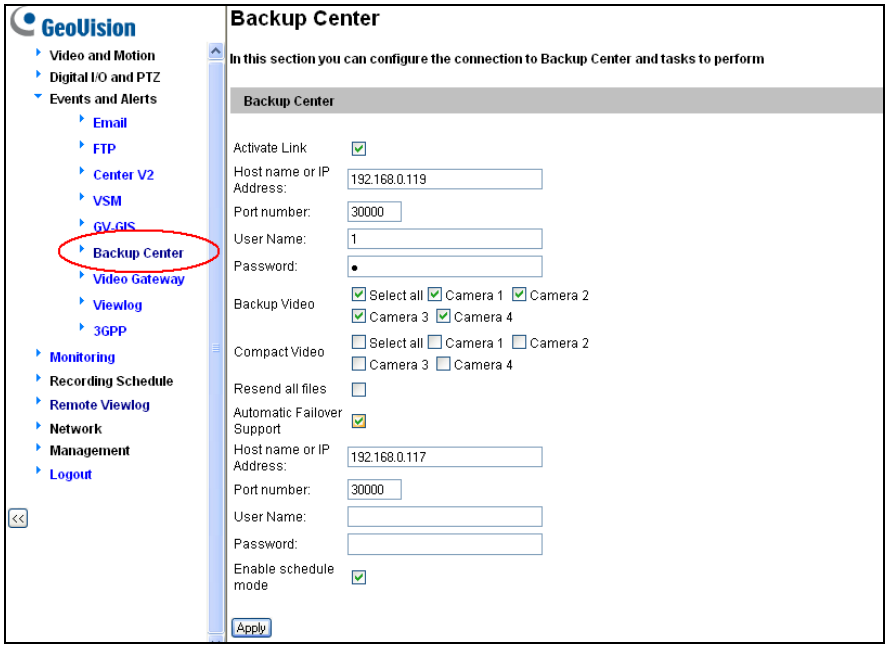


Figure 3-2

2. Select **Activate Link**.
3. Type IP address or domain name of GV-Backup Center.
4. Keep the default port number 30000. Otherwise, modify the port number to match **Listen Port** number on the GV-Backup Center (Figure 4-1).
5. Type **User Name** and **Password** to log onto the GV-Backup Center. These entries must match the account and password created on the GV-Backup Center (Figure 4-2). The default login account is **admin** and password is left blank.
6. In the **Backup Video** section, select the cameras that you want to back up their recordings to the GV-Backup Center.
7. In the **Compact Video** section, select the cameras that you only want to back up their **Key Frames** to the GV-Backup Center, instead of full recordings. This option is useful to save the backup time.

8. Select **Resend all files** in case of the network interruption. After the network is recovered, all the missing data will be resent to the GV-Backup Center again.
9. If there is the other GV-Backup Center for failover support, select **Automatic Failover Support** and type its connection information.
10. Optionally set up the schedule to back up data to the GV-Backup Center.
11. Click **Apply** to start the connection.

Ensure **Data Service** on the GV-Backup Center has been enabled, otherwise the connection attempt will fail. When the connection is established, a message "*Status: Connected. Connected Time:xxx*" will be displayed at the bottom of the GV-IP Device's Web interface.

On the GV-Backup Center, you can also see the online GV-IP Device icon, as the example below.

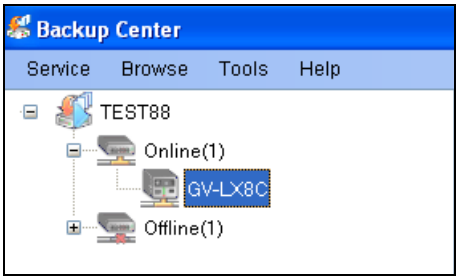


Figure 3-3

3.2.1 Setting Backup Frequency

The backup is created soon after the recordings are stored to the hard drive of GV-IP Devices. Therefore, the backup frequency is based on the **Split Interval** setting for time length of each event file on the GV-IP Devices. You can specify the backup frequency between 1 and 5 minutes.

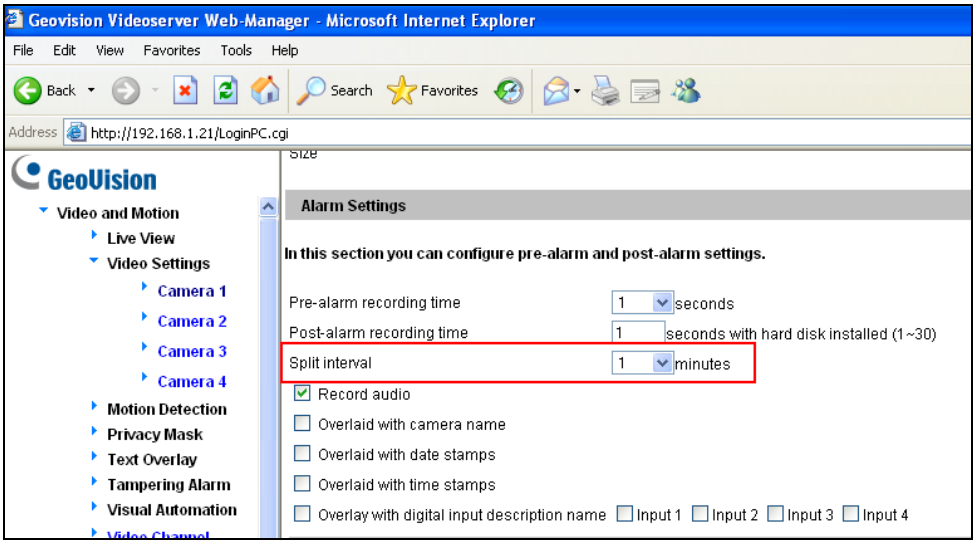


Figure 3-4

3.3 Connecting GV-DVR / NVR

You need to configure the GV-DVR / NVR in order to back up the recordings to the GV-Backup Center remotely over a network.

1. In the main screen of GV-DVR / NVR, click the **Network** button and select **Connect to Backup Center**. This dialog box appears.

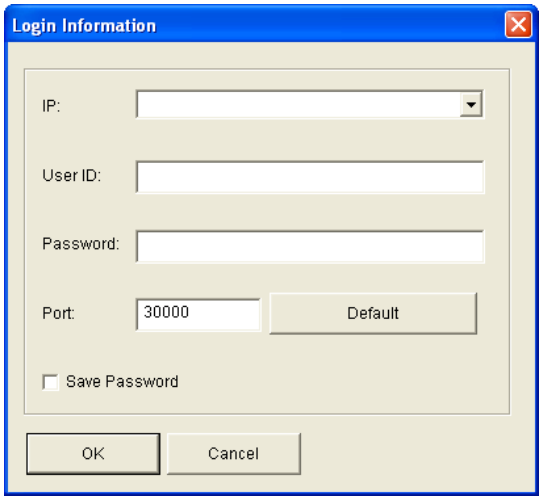


Figure 3-5

2. Type IP address or domain name of GV-Backup Center.
3. Type **User Name** and **Password** to log onto the GV-Backup Center. These entries must match the account and password created on the GV-Backup Center (Figure 4-2). The default ID and Password are **admin**.
4. Keep the default port number 30000. Otherwise, modify the port number to match **Listen Port** number on the GV-Backup Center (Figure 4-1).
5. Click **OK**. The login information is added.

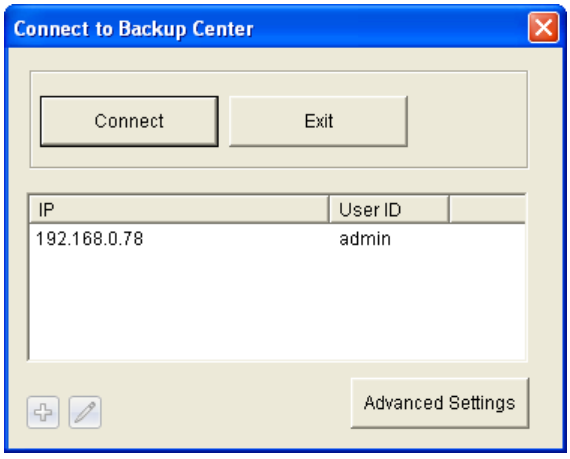


Figure 3-6

6. Click **Advanced Settings**.
   a. Specify the interval between each connection retry when connection is interrupted.
   b. Select **Enable Compacting Backup Video File** when you need to compact the recorded video files before backing up to GV-Backup Center.
      - If the recorded video is compressed with H.265 or H.264 codec, it'll be compacted into key frames only.
      - If the recorded video is compressed with MJPEG codec, you can use the **Reserved Frames (MJPEG)** option to specify the number of frames.
   c. Click **OK**.

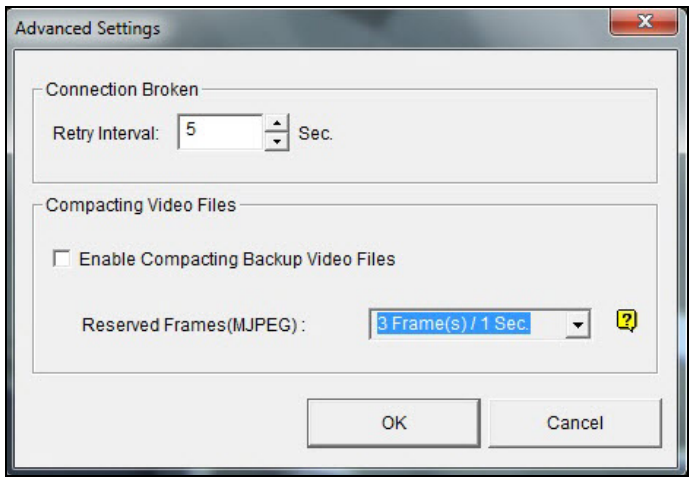


Figure 3-7

7. Click the **Connect** button to connect to GV-Backup Center.

Ensure **Data Service** on the GV-Backup Center has been enabled, otherwise the connection attempt will fail. When the connection is established, you can see the online DVR icon on the GV-Backup Center, as the example below.

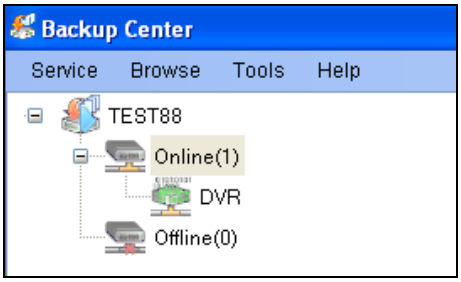


Figure 3-8

Note:

1. The round-the-clock events will be resent and backed up to the GV-Backup Center when the connection to GV-Backup Center is resumed from an interruption. However, to back up **motion and input trigger events**, ensure the connection to the GV-Backup Center is always enabled.

Figure 3-9

2. To back up **motion events** recorded on the GV-DVR / NVR, make sure to select **Register Motion Event** for each camera (Configure button > System Configure > Camera Configure).

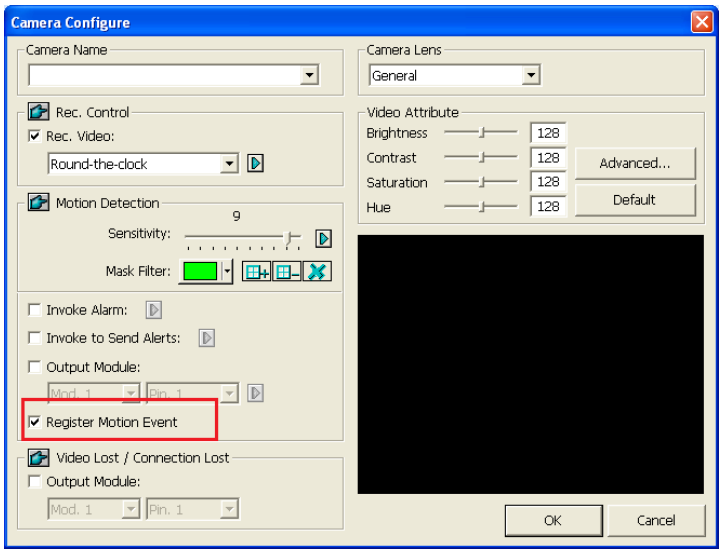


Figure 3-10

3. To back up **input trigger events** recorded on the GV-DVR / NVR, make sure to select **Register Input Event** for each input device. (Configure button > Accessories > I/O Device > I/O Application).

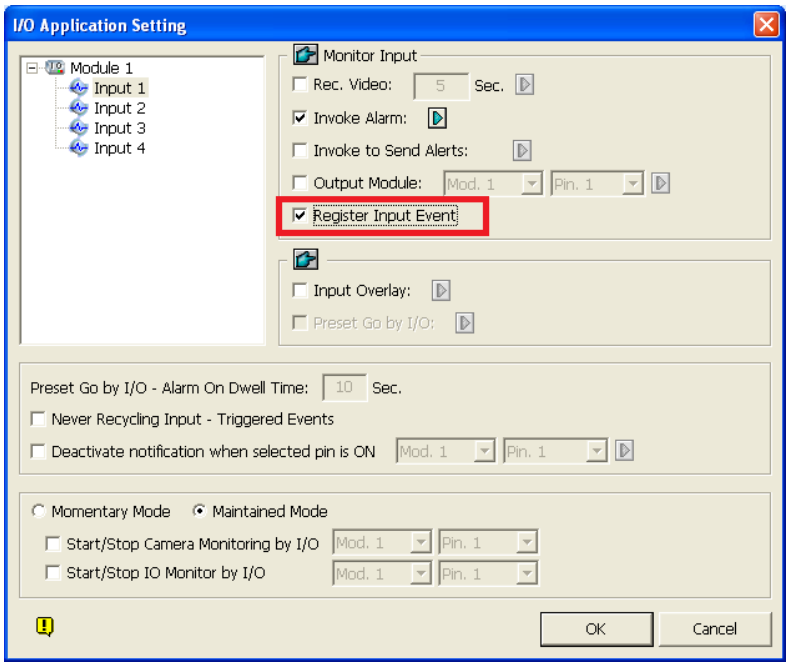


Figure 3-11

3.4 Connecting GV-VMS

You need to configure the GV-VMS in order to back up the recordings to the GV-Backup Center remotely over a network.

1. In the main screen of GV-VMS, click the **Toolbar** button, click the **Network** button, and select **Backup Center**. This dialog appears.

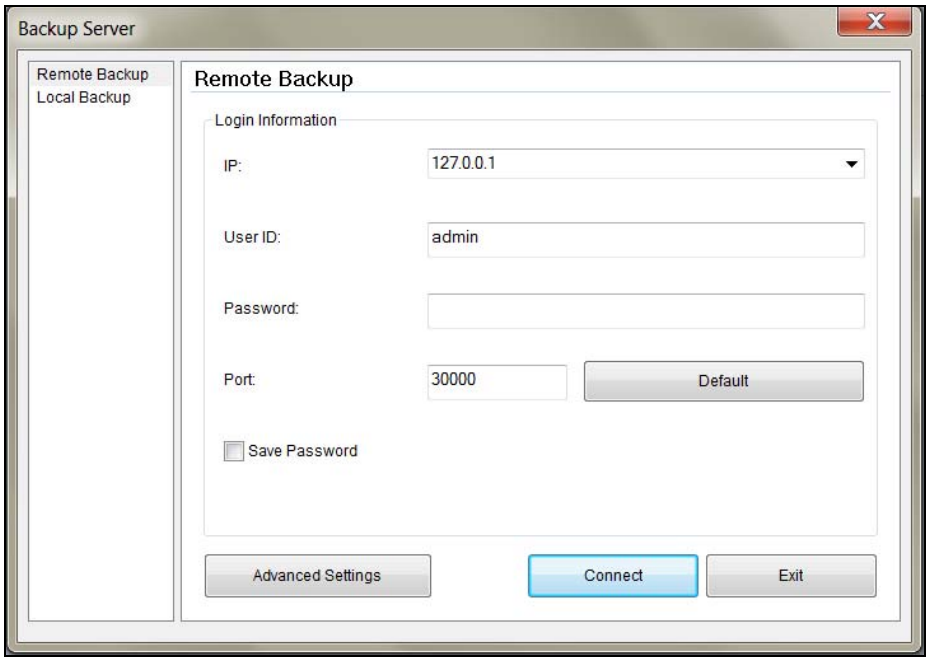


Figure 3-12

2. Type IP address or domain name of GV-Backup Center.
3. Type **User Name** and **Password** to log onto the GV-Backup Center. These entries must match the account and password created on the GV-Backup Center (Figure 4-2). The default ID and Password are **admin**.
4. Keep the default port number 30000. Otherwise, modify the port number to match **Listen Port** number on the GV-Backup Center (Figure 4-1).

5. Click **Advanced Settings**.
   a. Specify the interval between each connection retry when connection is interrupted.
   b. Select **Compact Video Files Before Backup** when you need to compact the recorded video files before backing up to GV-Backup Center.
      - If the recorded video is compressed with H.265 or H.264 codec, it will be compacted into key frames only.
      - If the recorded video is compressed with MJPEG codec, you can use the **Reserved Frames (MJPEG)** option to specify the number of frames.
   c. Select **Limit Bandwidth xx KB/Sec** to specify a bandwidth limit when uploading files to GV-Backup Center.
   d. Select **Delete these source files after the backup is complete** to delete the recorded files in GV-VMS after the files are successfully backed up to GV-Backup Center.
   e. Click **OK**.

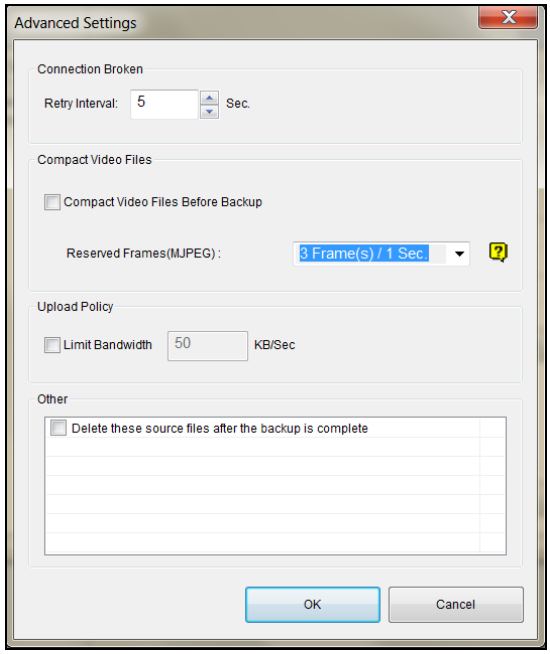


Figure 3-13

6. Click the **Connect** button to connect to GV-Backup Center.

Ensure **Data Service** on the GV-Backup Center has been enabled, otherwise the connection attempt will fail. When the connection is established, you can see the online VMS icon on the GV-Backup Center, as the example below.

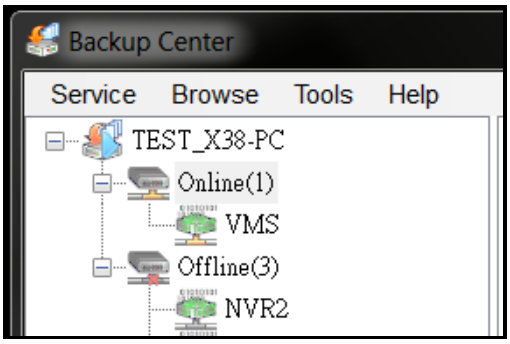


Figure 3-14

Note:

1. The round-the-clock events will be resent and backed up to the GV-Backup Center when the connection to GV-Backup Center is resumed from an interruption. However, to back up **motion and input trigger events**, ensure the connection to the GV-Backup Center is always enabled.
2. To back up **motion events** recorded on the GV-VMS, make sure to select **Register Motion Event** for each camera (Home > Toolbar > Configure > Camera Install, and click the button of the camera).
3. To back up **input trigger events** recorded on the GV-VMS, make sure to select **Register Input Event** for each input device (Home > Toolbar > Configure > Accessories > I/O Devices > I/O Application Setting).

3.5 Connecting GV-Recording Server

You need to configure the GV-Recording Server in order to back up recordings to the GV-Backup Center remotely over a network.

Note: The recordings of all the channels connected to the GV-Recording Server will be backed up to the GV-Backup Center. To ensure system performance, it is required to meet the maximum bit rate or channel numbers supported by GV-Recording Server, the necessary hard disk numbers and network deployment. For details, see section *1.5 Requirements for Connecting to GV-Recording Server*.

1. Access the Web interface of the GV-Recording Server, find **Advanced Management** in the tree menu, select **Backup Center** and click the **Edit** button at the bottom right corner of the Server List. This dialog box appears.

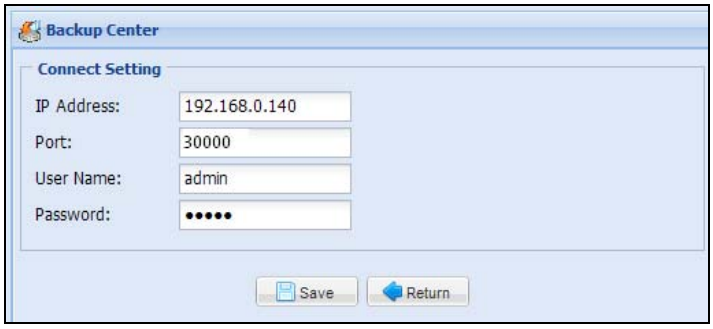


Figure 3-15

2. Type the **IP Address**, **Username** and **Password** of the GV-Backup Center. These entries must match the account and password created on the GV-Backup Center (Figure 4-2). The default ID and Password are **admin**.
3. Keep the default port number **30000**. Otherwise, modify the port number to match **Listen Port** number on the GV-Backup Center (Figure 4-1).
4. Click **Save** to connect to GV-Backup Center.
5. Click **Start** to enable the connection.

Ensure **Data Service** on the GV-Backup Center has been enabled, otherwise the connection attempt will fail. When the connection is established, you can see the online GV-Recording Server icon on the GV-Backup Center, as the example below.

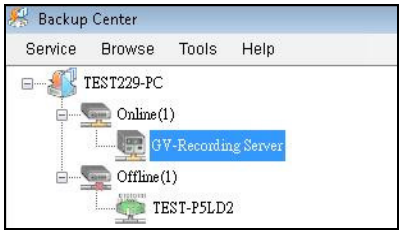


Figure 3-16

3.6 The Main Screen of GV-Backup Center

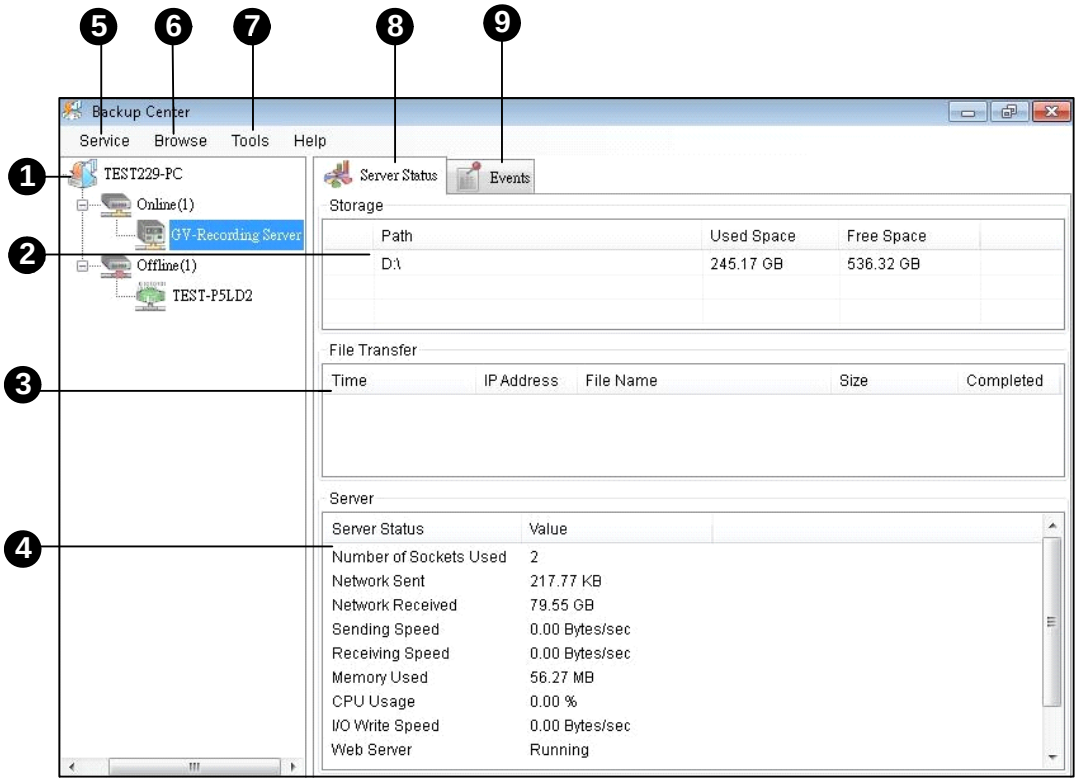


Figure 3-17

No	Name	Description
1	Host List	Displays connected GV-DVR / NVR, GV-VMS, GV-Recording Server and GV-IP Devices.
2	Storage Window	Displays the storage drives and space information.
3	File Transfer Window	Displays the information and progress of file transferring.
4	Server Window	Displays the server information of GV-Backup Center.

No	Name	Description
5	Service	Enables and disables the following GV-Backup Center services: ■ **Data Service:** Enables connection to GV-DVR / NVR, GV-VMS, GV-Recording Server and GV-IP Devices. ■ **Web Service:** Enables access to the GV-Backup Center's Web interface. ■ **ViewLog Service:** Enables remote access to the backup recordings on the GV-Backup Center.
6	Browse	Links to the Web interface of GV-Backup Center.
7	Tools	Accesses the advanced settings. See *Chapter 4 Configuring the GV-Backup Center.*
8	Server Status Tab	Displays the storage, file transfer and server information of GV-Backup Center.
9	Events Tab	Displays the current connection and file transfer status. The list of status events will automatically cleared each time the GV-Backup Center is restarted. The status events can be retrieved and filtered through the Web interface of GV-Backup Center.

3.7 Assigning Backup Locations

The backup location is where the recordings from GV-DVR / NVR, GV-VMS, GV-Recording Server and GV-IP Devices will be stored on the GV-Backup Center. You can assign different backup locations for each GV-IP Device, GV-Recording Server, GV-DVR / NVR and GV-VMS to back up its own recordings. The default backup location is at **C:\BackupSvr**.

IMPORTANT:

1. For the number of GV-DVR / NVR, GV-VMS and GV-IP Cameras supported by every hard disk, see *1.4 Network and HDD Requirements for GV-DVR / NVR, GV-VMS, and GV-IP Devices*. For GV-Recording Server, see *1.5 Requirements for Connecting to GV-Recording Server*.
2. It is recommended to install one hard disk for every 50 connected GV-Video Server and GV-Compact DVR due to the data transfer limit of the hard disk. For the maximum of 200 connected GV-Video Server and GV-Compact DVR, you need to install at least 4 hard disks.

1. Click **Tools** from the menu bar, select **Setting** and click **Storage**. The Storage Settings dialog box appears.
2. In the Storage list, select the **Disk** that you want to use as the backup location on the GV-Backup Center.

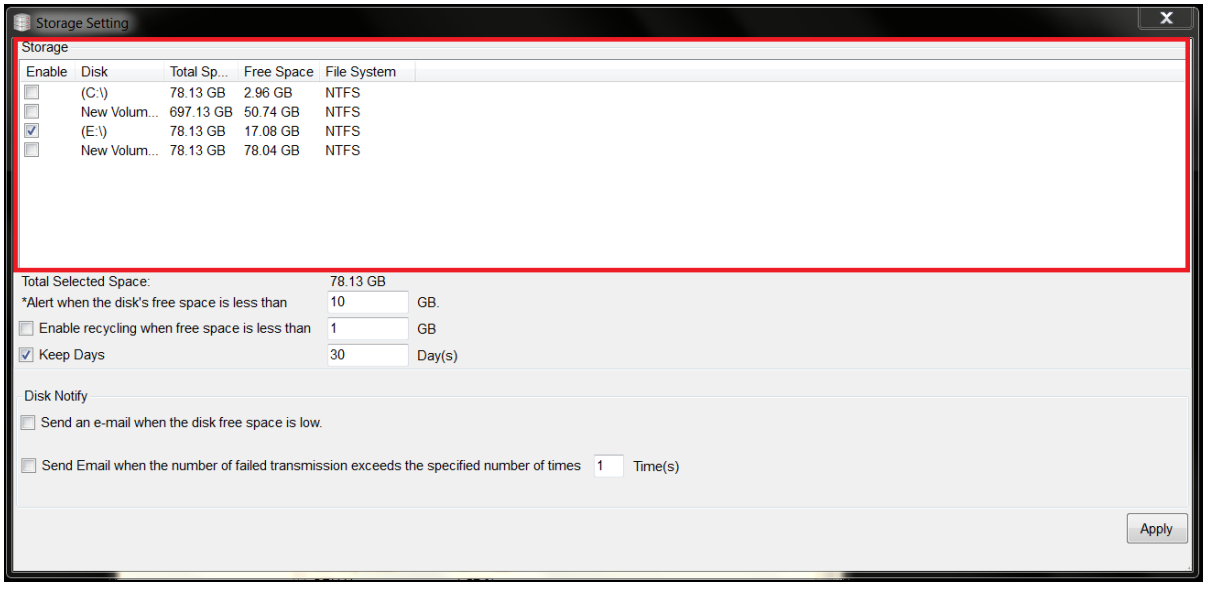


Figure 3-18

3. Click **Apply**.

4. To assign a disk for the host, right-click one host on the Host List, and select **Host Setting**. This dialog box appears.

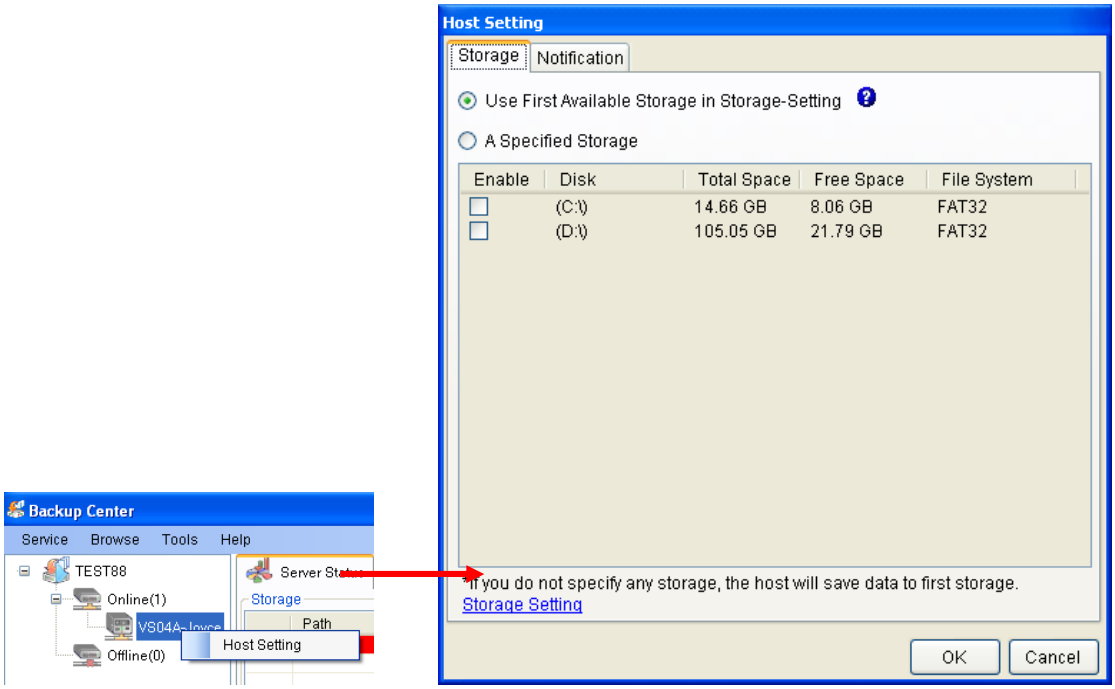


Figure 3-19

5. Select **Use First Available Storage in Storage Setting** to use the first available disk as the backup location for the host. Otherwise, select **A Specified Storage** and select one disk to be the backup location for the host.
6. Click **OK**.

Note: You can use **Media Man Tools** to remove a hard drive from the GV-Backup Center Server and monitor the storage of a hard drive. For details, refer to *Chapter 7, Media Man Tools*.

3.8 Setting E-Mail Notifications

The supervisor can be warned by e-mail messages when any disk space falls below certain threshold, any GV-DVR / NVR, GV-VMS, GV-Recording Server or GV-IP Device is disconnected with the GV-Backup Center or file transfer fails. For the e-mail alert function, follow the steps below to set up the mail server first.

3.8.1 Setting Mail Server

1. Click **Tools** from the menu bar, select **Setting** and click **E-Mail**. This dialog box appears.

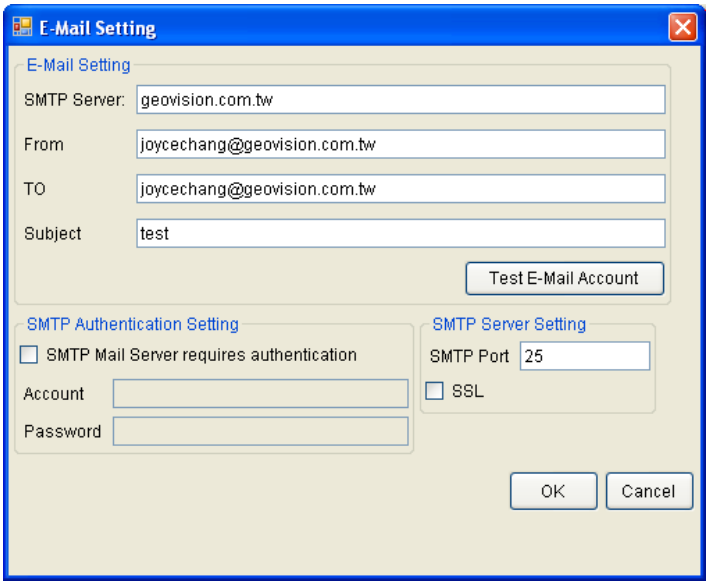


Figure 3-20

2. Type URL or IP address of the SMTP server.
3. Type the e-mail address where e-mails are sent from. The entered e-mail will appear as sender when the e-mail is received.
4. Type e-mail addresses of recipients. For multiple recipients, add a semicolon between each e-mail address.
5. Type a subject coming with the alert message.
6. Click **Test E-Mail Account** to send out a test e-mail to see whether the setup is correct. If the connection attempt fails, you may also need to check the settings of **SMTP Authentication Setting** and **SMTP Server Settings** described below.

Other options on the dialog box:

[SMTP Authentication Setting] If the SMTP server needs authentication, select this option and type your account name and password.

[SMTP Server Setting] Keep the default port 25 which is common for most SMTP servers. However webmail providers such as Yahoo and Hotmail generally use different SMTP port. In this case, check with e-mail providers for SMTP port number. Select **SSL** if the SMTP server requires the SSL authentication for connection.

3.8.2 Setting E-Mail Alerts

Setting Low Disk Space Alerts

When any disk space on the GV-Backup Center is lower than the specified limit, e-mails will be sent out to warn the supervisor.

1. Click **Tools** from the menu bar, select **Setting** and click **Storage**. The Storage Setting dialog box appears (Figure 3-18).
2. Specify the limit of free space of each disk in the **Alert when the disk free space is less than** field.
3. Select **Send an e-mail when the disk free space low**.
4. Click **Apply**.

Setting Failed Transmission Alerts

When the failed file transmission from any host exceeds the specified number of times, e-mails will be sent out to warn the supervisor.

1. Click **Tools** from the menu bar, select **Setting** and click **Storage**. The Storage Setting dialog box appears (Figure 3-18).
2. Specify the number of times of failed transmission in the **Sent Email when the number of failed transmission exceeds the specified number of times** field and select this function.
3. Click **Apply**.

Setting Alerts for Disconnection and File Transfer Failure

The supervisor can be warned by e-mail messages when any GV-IP Device, GV-Recording Server, GV-VMS, or GV-DVR / NVR is disconnected from the GV-Backup Center, or file transfer is interrupted.

1. On the Host List, right-click one host and select **Host Setting**. The Host Setting dialog box appears (Figure 3-16).

2. Click the **Notification** tab. This dialog box appears.

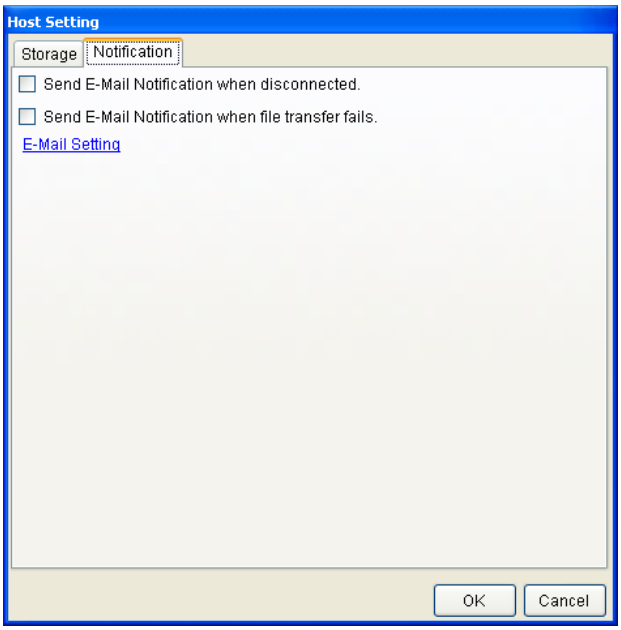


Figure 3-21

3. To send e-mail alerts when the host is disconnected from the GV-Backup Center, select **Send E-Mail Notification when disconnected**.
4. To send e-mail alerts when the file transfer from the host fails, select **Send E-Mail Notification when file transfer fails**.
5. Click **OK**.

Chapter 4 Configuring the GV-Backup Center

To access more settings of GV-Backup Center, click **Tools** from the menu bar and select **Setting**. This chapter describes these advanced settings: General Setup, Account, Storage, Database, E-Mail, and File Transfer.

4.1 General Settings

The General Settings allow you to configure the communication ports of GV-Backup Center and automatic startup services.

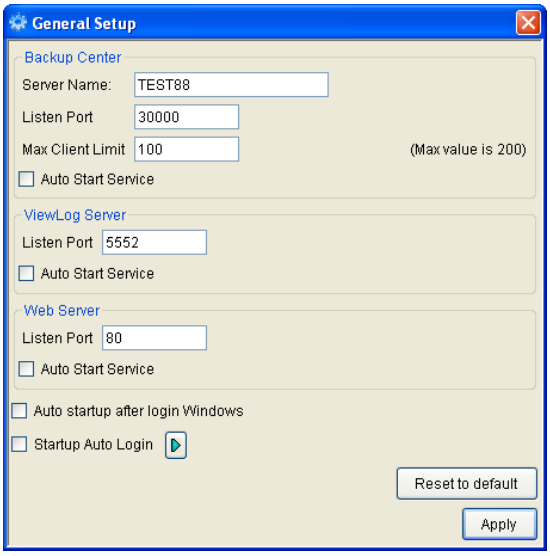


Figure 4-1

[Backup Center]

- **Server Name:** Name the GV-Backup Center. The default value is the computer name.
- **Listen Port:** The default communication port of GV-Backup Center is 30000.
- **Max Client Limit:** Specify the maximum number of connections from hosts allowed to access the GV-Backup Center. The maximum value is 200.
- **Auto Start Service:** Automatically starts connection to configured hosts once the GV-Backup Center is started.

[ViewLog Server]

- **Listen Port:** The port allows remote access to the backup recordings on the GV-Backup Center.

- **Auto Start Service:** Automatically enable the remote playback service once the GV-Backup Center is started.

[Web Server]

- **Listen Port:** The HTTP port allows connecting the GV-Backup Center to the Web.
- **Auto Start Service:** Automatically enable remote access to the Web interface of GV-Backup Center once the GV-Backup Center is started.
- **Auto startup after login Windows:** Automatically start the GV-Backup Center after Windows startup.
- **Start Auto login:** Automatically log onto the GV-Backup Center after Windows startup. Click the Arrow button to enter the account and password for the automatic login.

4.2 Account Settings

Using the Account Settings, you can create new accounts with different access rights. Up to 100 accounts, including Users and Supervisors, can be created.

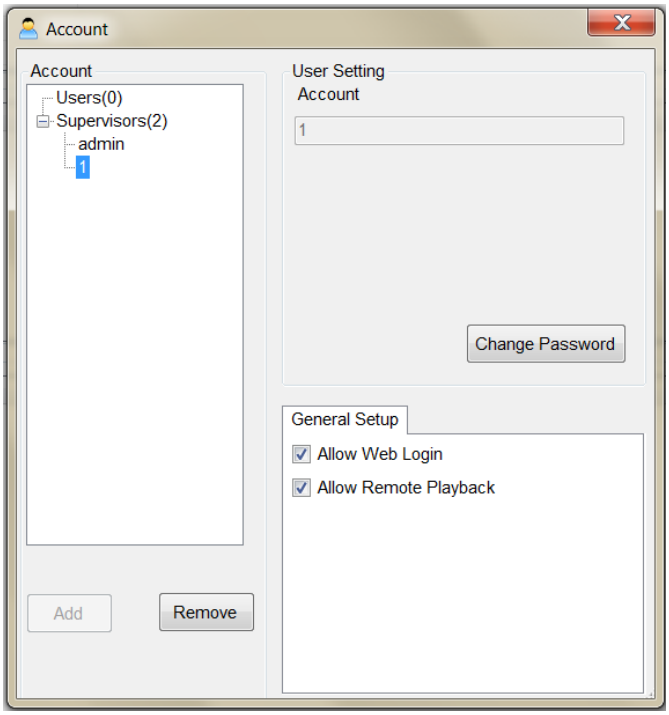


Figure 4-2

Under the **General Setup** tab, there are two options:

- **Allow Web Login:** Allows the user to access the Web interface of GV-Backup Center.
- **Allow Remote Playback:** Allows the user to remotely access the backup recordings on the GV-Backup Center.

4.3 Storage Settings

The Storage Settings allow you to specify the backup locations, free space limit and low free space alerts.

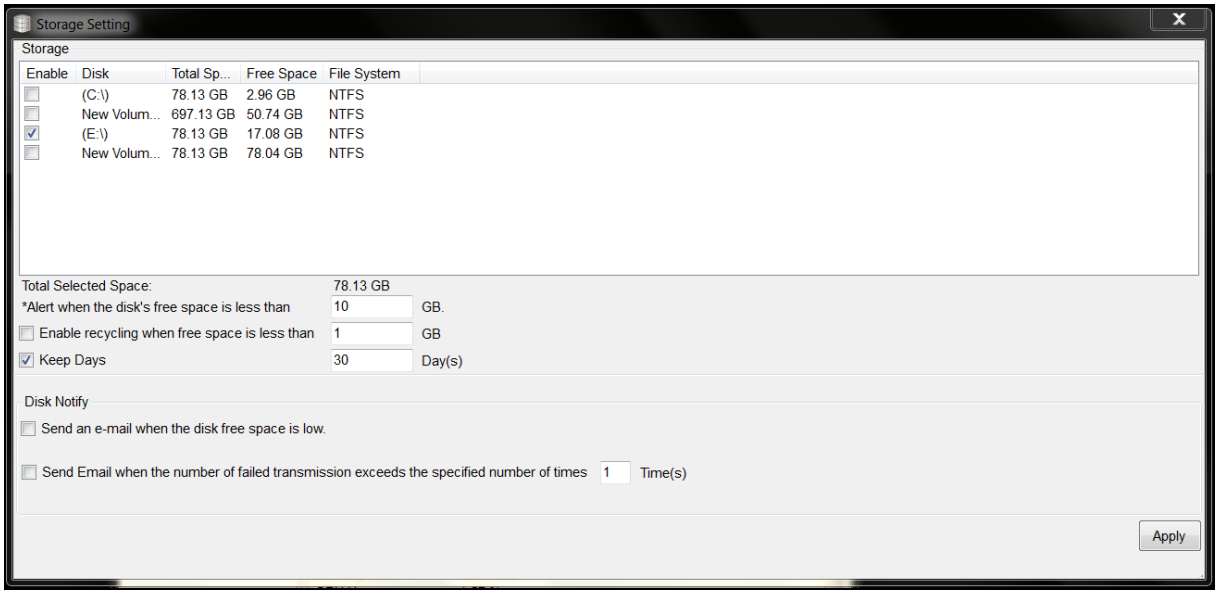


Figure 4-3

[Storage] In the **Storage** list, select the disks to be storage locations.

- **Alert when the disk's free space is less than xx GB:** When any disk space is less than the specified limit, e-mail alerts will be sent to warn you. See *3.8.2 Setting E-Mail Alerts*.
- **Enable recycling when free space is less than xx GB:** When the free space of each disk is less than the specified limit, old recordings on that disk will be overwritten. Every time the data of 2 GB will be deleted.
- **Keep Days:** Specify the number of days to keep the recordings from 0 (unlimited) to 999 days. When **Enable recycling when free space is less than xx GB** and **Keep Days** are both selected, the system applies whichever condition comes first. For example, if the specified smallest amount of storage space comes earlier than the specified Keep Days, then recycling is applied first.

[Disk Notify]

- **Send an e-mail when the disk free space is low:** Enables the e-mail alert when any disk space is less than the specified limit. See *3.8.2 Setting E-Mail Alerts*.

- **Send Email when the number of failed transmission exceeds the specified number of times:** Enables the e-mail alert when the failed file transfer from any host exceeds the specified number of times. See *3.8.2 Setting E-Mail Alerts*.

IMPORTANT:

1. For the number of GV-DVR / NVR, GV-VMS, and GV-IP Cameras supported by every hard disk, see *1.4 Network and HDD Requirements for GV-DVR / NVR, GV-VMS, and GV-IP Devices*. For GV-Recording Server, see *1.5 Requirements for Connecting to GV-Recording Server*.
2. It is recommended to install one hard disk for every 50 connected GV-Video Server and GV-Compact DVR due to the data transfer limit of the hard disk. For the maximum of 200 connected GV-Video Server and GV-Compact DVR, you need to install at least 4 hard disks.

4.4 Database Settings

You can modify the storage path of GV-Backup Center's database (system log) and specify the number of days to keep the database.

When the **Recycle** option is selected, some part of the database will be overwritten when the storage space is lower than 500 MB. When **Recycle** and **Keep Days** are both selected, the system applies whichever condition comes first. For example, if the low storage space (500 MB) comes earlier than the specified Keep Days, then recycle is applied first.

If the operating system of GV-Backup Center is of NTFS file system, you can select **Enable Database Compression** to save disk space.

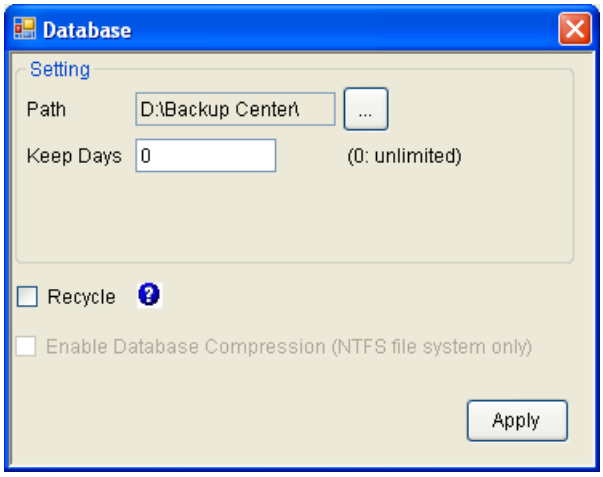


Figure 4-4

4.5 E-Mail Settings

To configure the mail server to send alerts, see *3.8.1 Setting Mail Server*.

4.6 File Transfer Settings

The File Transfer Settings allow you to configure file backup schedule and transfer time for all the connected hosts of GV-DVR / NVR, GV-VMS, and GV-IP Devices. To configure for a specific host, see *Configuring File Transfer Settings for A Specific Host* later in this section.

Note: Currently, the file transfer settings are not supported for the GV-Recording Server.

In this setting dialog box, you can define the following backup rules:

- The day to back up the recordings.
- The time period of recordings to be transferred.
- The type of recording to be transferred, including motion detection, I/O trigger or all types of events.
- The time to back up the files.

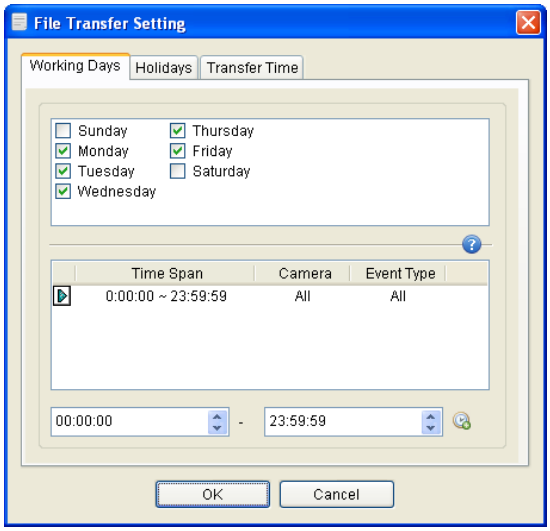


Figure 4-5

[Working Days] Define up to 10 backup rules for working days, including which working day, which camera and which type of recording to be transferred to the GV-Backup Center.

1. Select the day, including Monday to Sunday.
2. Click the arrow button before Time Span and select **Modify**.

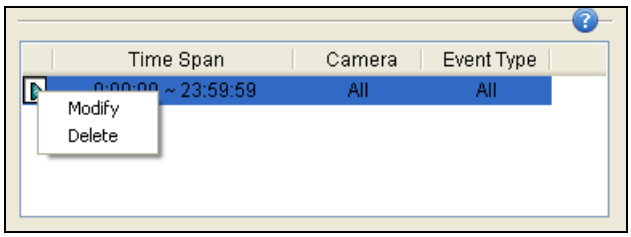


Figure 4-6

3. In this dialog box, select the **Camera** that you want to back up its recordings, specify **Time Span** in which time period of recordings to be transferred, and select **Events** that you want to back up all event files, or Motion and/or I/O trigger events only.

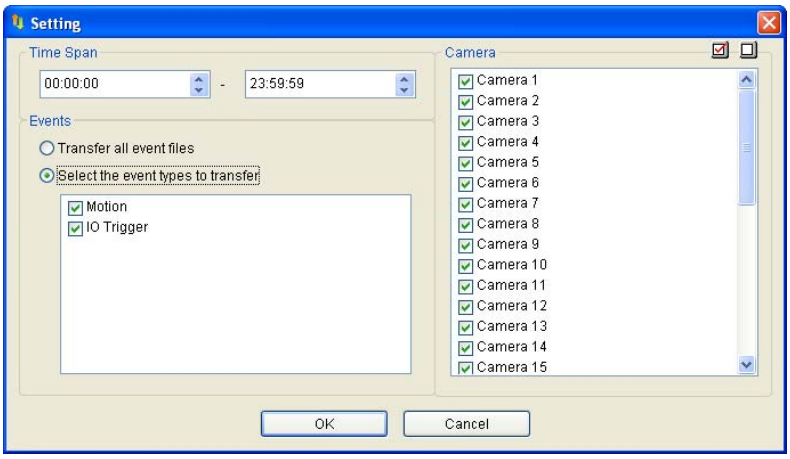


Figure 4-7

4. Click **OK**. The backup settings are created.

5. To define another backup rule, click the  button. A new Time Span is created.

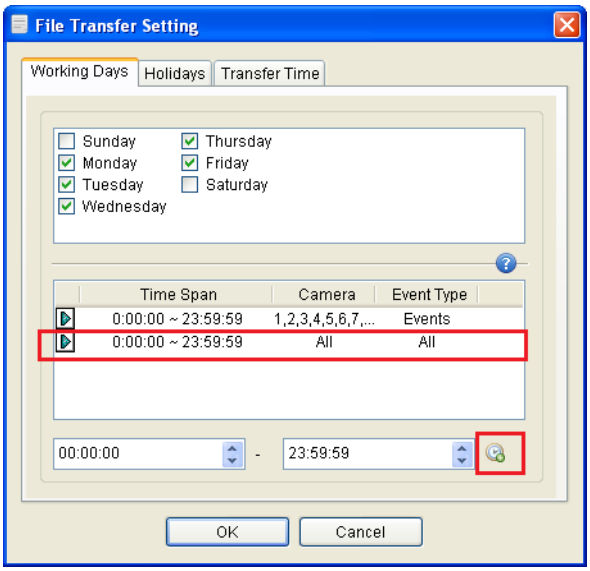


Figure 4-8

6. Click the arrow button, select **Modify** and follow the step 3 to define the backup rule.

[Holidays] In this tab, you can define up to 10 backup rules for non-working days, which include which non-working day, which camera and which type of recording to be transferred to the GV-Backup Center. For how to set up a rule, see the instructions in the above **[Working Days]**.

[Transfer Time] In this tab, you can define the time to back up the files from the hosts to the GV-Backup Center, based on the rules you set up for working days and non-working days.

Note: For Transfer Time settings, the time period across the midnight is only supported by GV-DVR / NVR V8.5.9 or later, GV-VMS V16.10.3 or later and GV-IP Camera firmware V2.10 or later.

Configuring File Transfer Settings for A Specific Host

To set up file transfer schedule for a specific host, follow the steps below.

Note: This function is only supported by GV-DVR / NVR V8.5.9 or later, GV-VMS V16.10.3 or later and GV-IP Camera firmware V2.10 or later.

1. On the host list of GV-Backup Center, right-click the desired host, select **File Transfer** and click **Setting**.

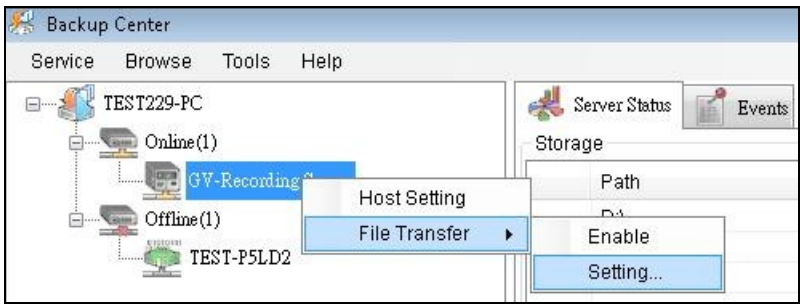


Figure 4-9

2. For the settings of **Working Days**, **Holidays** and **Transfer Time**, see the instructions above.
3. To activate the file transfer settings, on the host list, right-click the configured host again, click **File Transfer** and select **Enable**.

Chapter 5 Accessing the Backup Data Using a Web Browser

After the GV-Backup Center service is started, the backup data are accessible through network.

Note: For remote viewing through network, Internet Explorer 7.0 or later is required.

5.1 Accessing the Web Interface

To access the GV-Backup Center through the network, ensure the **Web Service** (No. 5, Figure 3-14) on the GV-Backup Center has been enabled; otherwise the access to the web browser will fail.

1. Two methods to access the Web interface of GV-Backup Center:
   A. If you are at the local GV-Backup Center, select **Browse** from the menu bar and select **Event Data**. The login page appears.
   B. If you are at a remote computer, start the Internet Explorer browser. Enter the IP address or the domain name of GV-Backup Center in the Location/Address field of your browser. The login page appears.

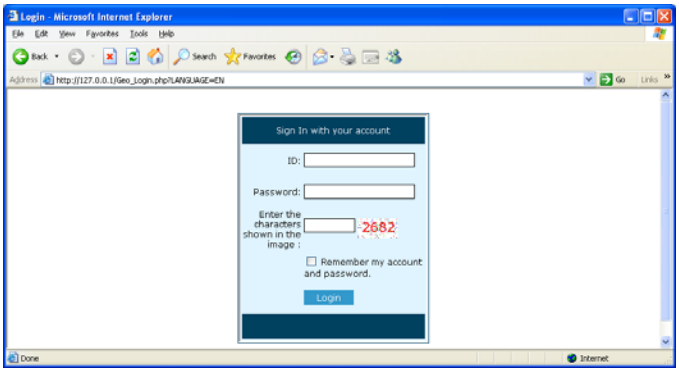


Figure 5-1

2. Enter the login ID and Password of GV-Backup Center.
3. Enter the characters shown in the image.

4. Click **Login**. The web page similar to the following example is now displayed in your browser.

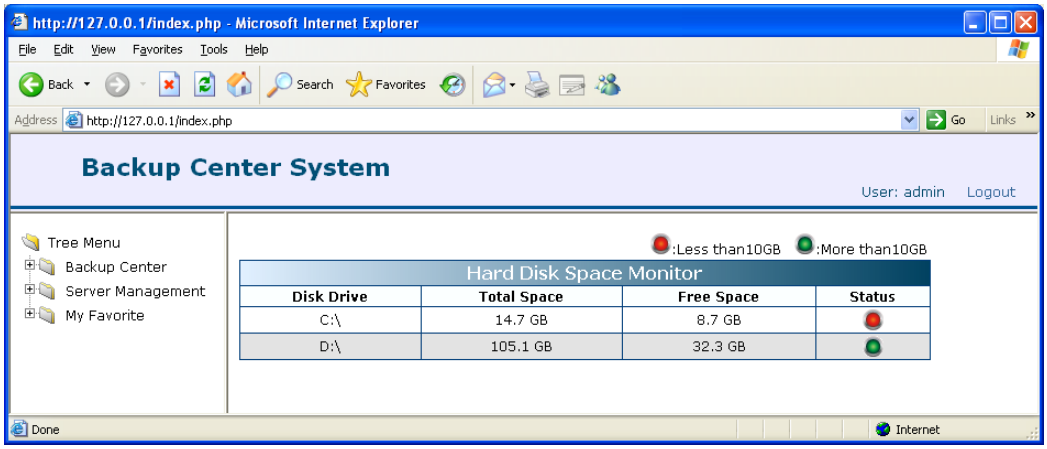


Figure 5-2

5.2 Tree Menu

On the left side of the Web interface, you can see the tree menu.

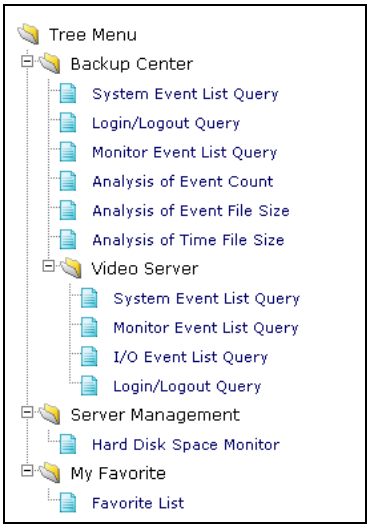


Figure 5-3

Backup Center	This category is for searching the whole backup data on the GV-Backup Center by certain criteria. ■ **System Event List Query:** Searches the system-related events of GV-Backup Center. ■ **Login/Logout Query:** Searches the login and logout events during a specified period of time. ■ **Monitor Event List Query:** Searches the desired events during a specified period of time. ■ **Analysis by Event Count:** Displays the relative number of all events during a specified period of time. ■ **Analysis by Event File Size:** Displays the relative file size of all events during a specified period of time. ■ **Analysis by Time:** Displays the relative number of all events by year, month or date. ■ **Analysis of File Size by Time:** Displays the relative file size of all events by year, month or date.
Video Server	This category is for searching the backup data of GV-Video Server(s) and GV-Compact DVR(s) by certain criteria. For the supported firmware version of GV-Video Server and GV-Compact DVR, see *1.2 Compatible GeoVision Software and IP Devices*.
Server Management	Hard Disk Space Monitor displays the space information of storage drives on the GV-Backup Center.
My Favorite	Lists the saved search criteria.

5.3 System Event List Query

The **System Event List Query** page shows a list of system-related events for a selected period of time.

The System Event List Query in the **Backup Center** category (see *5.2 Tree Menu*) allows you to access the File Transfer events of GV-Backup Center. The System Event List Query in the **Video Server** category (see *5.2 Tree Menu*) provides the system events of GV-DVR / NVR, GV-VMS, GV-Recording Server and GV-IP Devices, such as Reboot, Video Lost and etc.

To define search criteria:

1. In the **Backup Device** section, select one GV-Backup Center or **Select All**.
2. In the **Login Device** section, select desired hosts or **Select All**.
3. In the **Event Type** section, select one type of event or **Select All**.
4. In the **Time** section, select a period of time.
5. Click **Query** to display the search results.

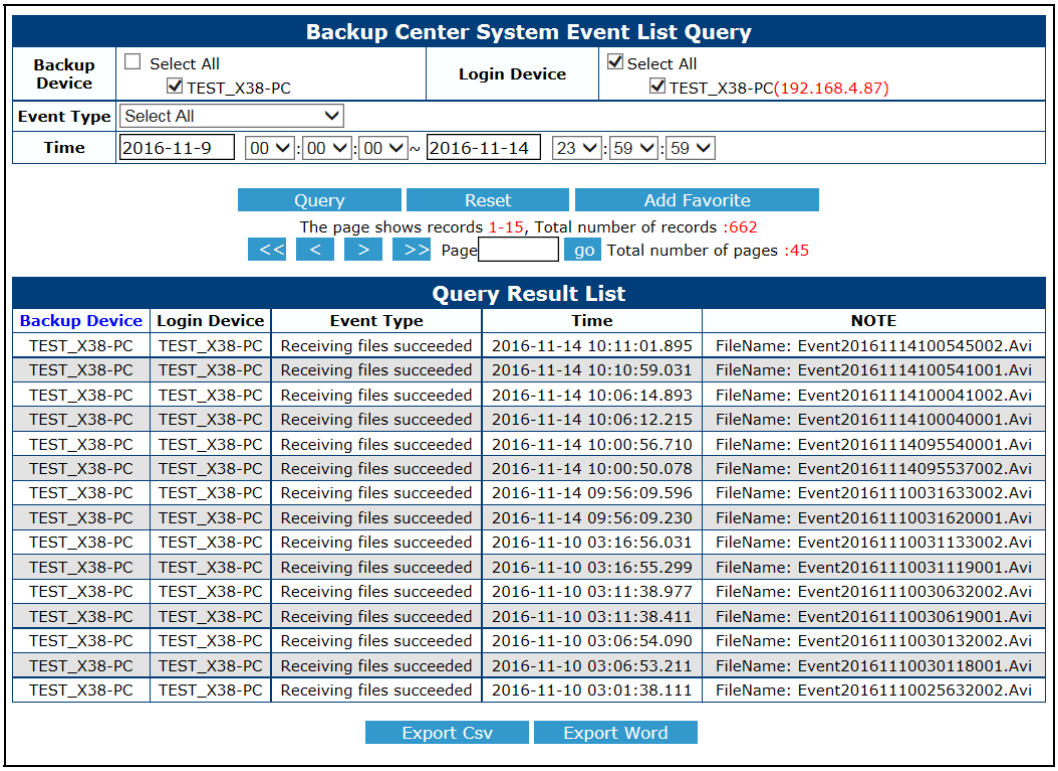


Figure 5-4

You can click the **Add Favorite** button to save the search criteria to the Favorite List for future use. You can also click the **Export CSV** and **Export Word** buttons to export the search results in EXCEL and WORD formats respectively.

5.4 Login and Logout Query

If you want to know which user accounts have logged into the GV-Backup Center, GV-DVR / NVR, GV-VMS, GV-Recording Server or GV-IP Devices during a specified period of time, the **Login/Logout Query** page can give you answer.

To define search criteria:

1. In the **Backup Device** section, select one GV-Backup Center or **Select All**.
2. In the **Login Device** section, select desired hosts or **Select All**.
3. In the **User Name** section, type an account name. You can also leave the field blank to search all accounts.
4. In the **Login/Logout** section, select **Login**, **Logout** or **Select All**.
5. In the **Time** section, select a period of time.
6. In the **Status** section, select **Fail**, **Success** or **Select All**.
7. Click **Query** to display search results.

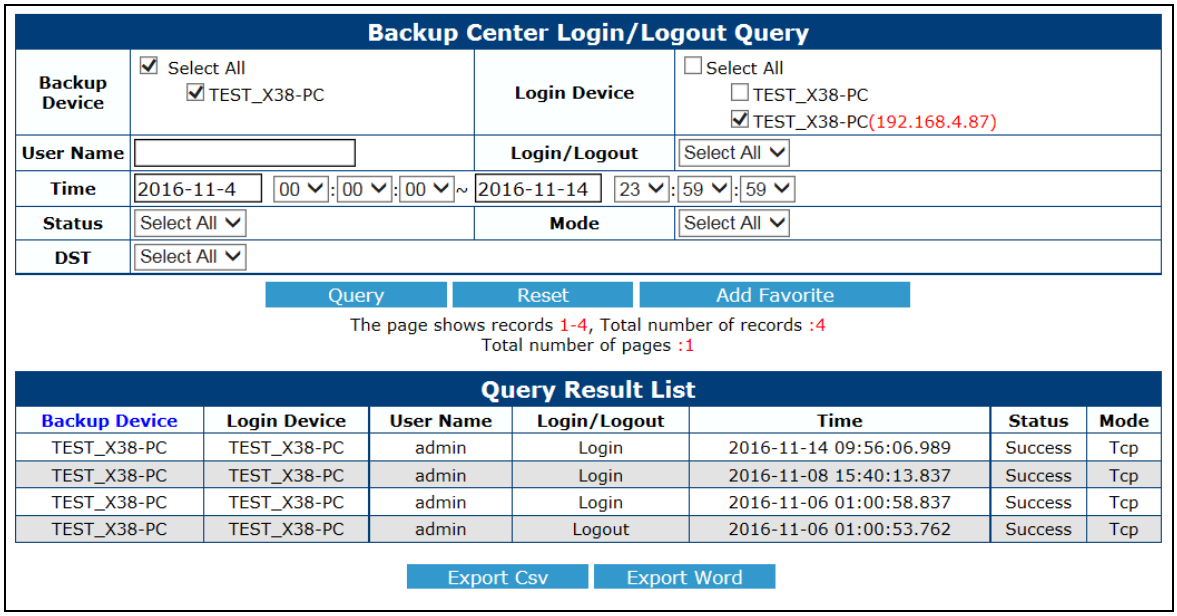


Figure 5-5

You can click the **Add Favorite** button to save the search criteria to the Favorite List for future use. You can also click the **Export CSV** and **Export Word** buttons to export the search results in EXCEL and WORD formats respectively.

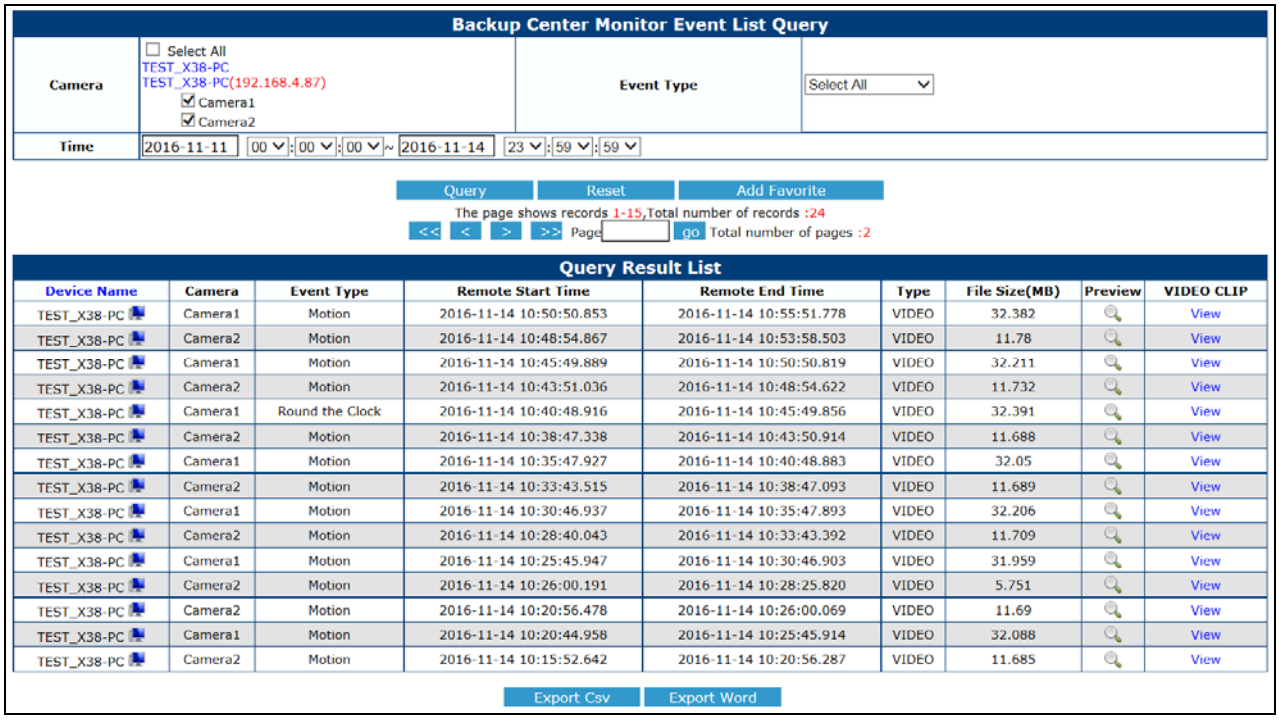
Note: The **Mode** and **DST** options on the Login/Logout Query are **NOT** functional.

5.5 Monitor Event List Query

The **Monitor Event List Query** page helps you locate the desired events during a specified period of time. The query results contain video preview and clip for further identification. To see video preview or clip, ensure **ViewLog Service** on the GV-Backup Center is enabled.

To define search criteria:

1. In the **Camera** section, click desired hosts to display the contained cameras. Then select desired cameras.
2. In the **Event Type** section, select one type of event or **Select All**.
3. In the **Time** section, select a period of time.
4. Click **Query** to display search results.



Backup Center Monitor Event List Query

Camera: Select All; TEST_X38-PC; TEST_X38-PC(192.168.4.87); Camera1; Camera2

Event Type: Select All

Time: 2016-11-11 00:00:00 ~ 2016-11-14 23:59:59

Query | Reset | Add Favorite

The page shows records 1-15,Total number of records :24

<< < > >> Page go Total number of pages :2

Query Result List

Device Name	Camera	Event Type	Remote Start Time	Remote End Time	Type	File Size(MB)	Preview	VIDEO CLIP
TEST_X38-PC	Camera1	Motion	2016-11-14 10:50:50.853	2016-11-14 10:55:51.778	VIDEO	32.382		View
TEST_X38-PC	Camera2	Motion	2016-11-14 10:48:54.867	2016-11-14 10:53:58.503	VIDEO	11.78		View
TEST_X38-PC	Camera1	Motion	2016-11-14 10:45:49.889	2016-11-14 10:50:50.819	VIDEO	32.211		View
TEST_X38-PC	Camera2	Motion	2016-11-14 10:43:51.036	2016-11-14 10:48:54.622	VIDEO	11.732		View
TEST_X38-PC	Camera1	Round the Clock	2016-11-14 10:40:48.916	2016-11-14 10:45:49.856	VIDEO	32.391		View
TEST_X38-PC	Camera2	Motion	2016-11-14 10:38:47.338	2016-11-14 10:43:50.914	VIDEO	11.688		View
TEST_X38-PC	Camera1	Motion	2016-11-14 10:35:47.927	2016-11-14 10:40:48.883	VIDEO	32.05		View
TEST_X38-PC	Camera2	Motion	2016-11-14 10:33:43.515	2016-11-14 10:38:47.093	VIDEO	11.689		View
TEST_X38-PC	Camera1	Motion	2016-11-14 10:30:46.937	2016-11-14 10:35:47.893	VIDEO	32.206		View
TEST_X38-PC	Camera2	Motion	2016-11-14 10:28:40.043	2016-11-14 10:33:43.392	VIDEO	11.709		View
TEST_X38-PC	Camera1	Motion	2016-11-14 10:25:45.947	2016-11-14 10:30:46.903	VIDEO	31.959		View
TEST_X38-PC	Camera2	Motion	2016-11-14 10:26:00.191	2016-11-14 10:28:25.820	VIDEO	5.751		View
TEST_X38-PC	Camera2	Motion	2016-11-14 10:20:56.478	2016-11-14 10:26:00.069	VIDEO	11.69		View
TEST_X38-PC	Camera1	Motion	2016-11-14 10:20:44.958	2016-11-14 10:25:45.914	VIDEO	32.088		View
TEST_X38-PC	Camera2	Motion	2016-11-14 10:15:52.642	2016-11-14 10:20:56.287	VIDEO	11.685		View

Export Csv | Export Word

Figure 5-6

You can click the **Add Favorite** button to save the search criteria to the Favorite List for future use. You can also click the **Export CSV** and **Export Word** buttons to export the search results in EXCEL and WORD formats respectively.

5.6 Analysis by Event Count

The **Analysis by Event Count** page shows the relative number of event types for a selected period of time. The search results can be displayed in three graph types: Bar, Pie and Line.

To define search criteria:

1. In the **Camera** section, click desired hosts to display the contained cameras. Then select desired cameras.
2. In the **Event Type** section, select one type of event or **Select All**.
3. In the **Time** section, select a period of time.
4. Select one type of graph.
5. Click **Query** to display search results.

For the example below, we set **Select All** as Event Type and select **Bar Graph** to display search results. The Bar Graph shows the relative number of all events. The horizontal axis displays the type of event. In this case there are only two event types Motion Detection and Round-the-Clock. The vertical axis displays the number of events occurred in the selected cameras. When we move the mouse pointer over the bar graphic, the exact number of events will be displayed.

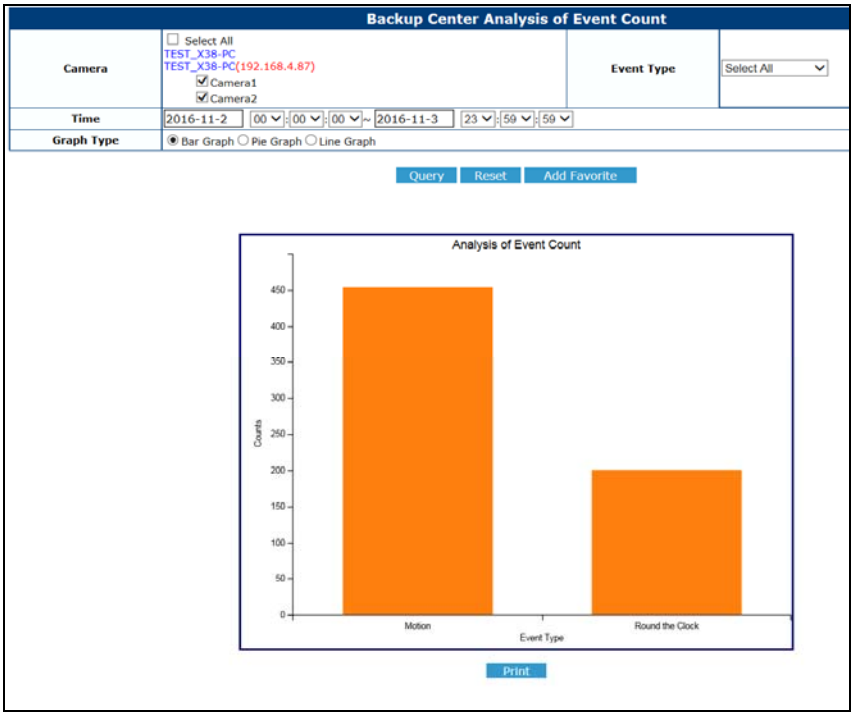


Figure 5-7

You can click the **Add Favorite** button to save the search criteria to the Favorite List for future use. You can also click the **Print** button to print out the graph.

5.7 Analysis by Event File Size

The **Analysis by Event File Size** page shows the relative file size of all events for a selected period of time. The search results can be displayed in three graph types: Bar, Pie and Line.

To define search criteria, see 5.6 *Analysis by Event Count*.

For the example below, we set **Select All** as Event Type and select **Bar Graph** to display search results. The Bar Graph shows the relative file size of all events. The horizontal axis displays the type of event. In this case there are only two event types Motion Detection and Round-the-Clock. The vertical axis displays the file size of events occurred in the selected cameras, in the unit of **MB**. When we move the mouse pointer over the bar graphic, the exact file size of events will be displayed.

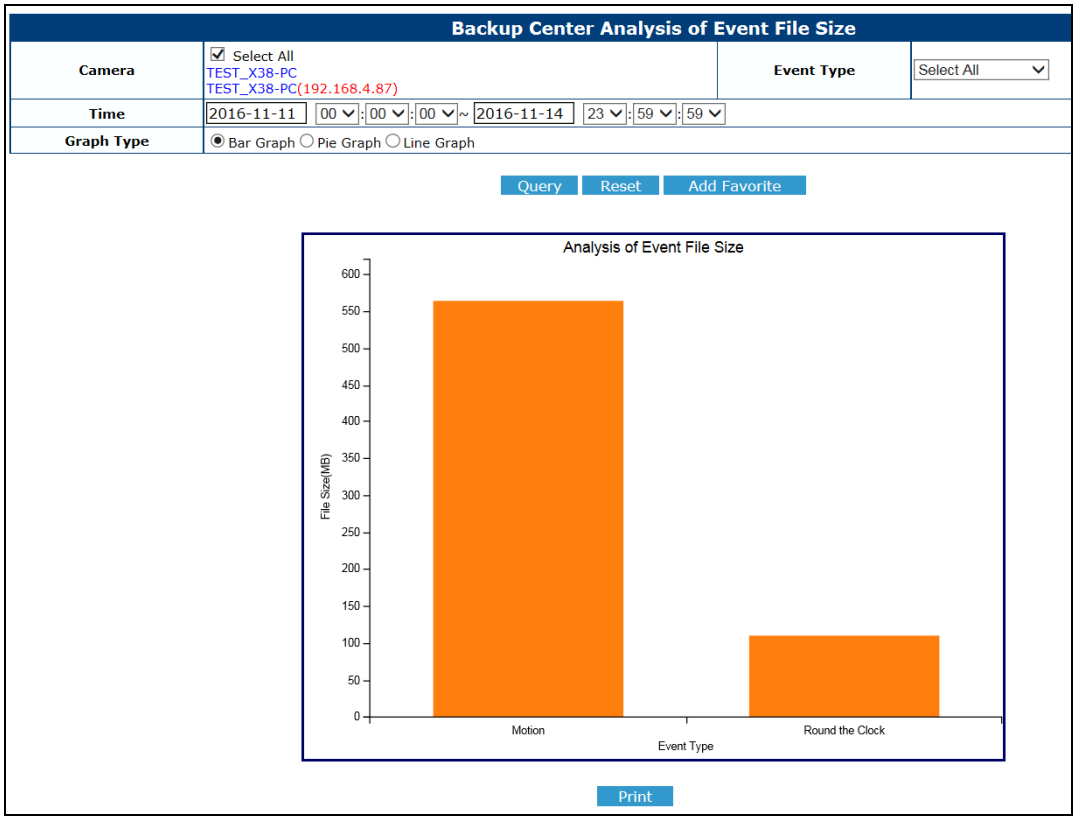


Figure 5-8

You can click the **Add Favorite** button to save the search criteria to the Favorite List for future use. You can also click the **Print** button to print out the graph.

5.8 Analysis by Time

The **Analysis by Time** page shows the relative number of all events by year, month or date. This analysis is useful to determine the peak time of events.

To define search criteria, see 5.6 *Analysis by Event Count*.

For the example below, we select **All Cameras**, select **By Day** as Period Type, specify the date as November 8, 2016, and select **Pie Graph** to display search results. The Pie Graph shows the relative proportion of events by hour for the specified date. When we move the mouse pointer over each sector, the exact number of events will be displayed.

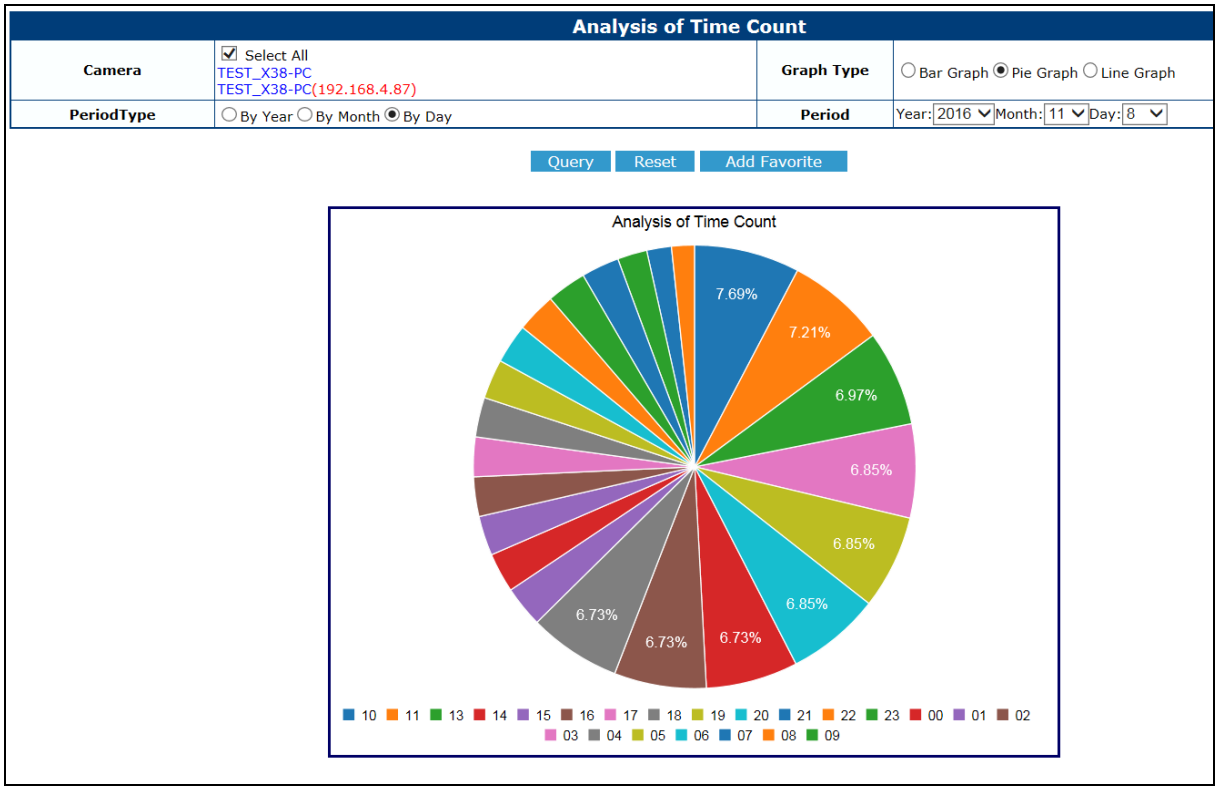


Figure 5-9

5.9 Analysis of File Size by Time

The **Analysis of File Size by Time** page shows the relative file size of all events by year, month or date. The search results can be displayed in three graph types: Bar, Pie and Line.

To define search criteria, see 5.6 *Analysis by Event Count*.

For the example below, we select **All Cameras**, select **By Day** as Period Type, specify the date as November 8, 2016, and select **Line Graph** to display search results. The Line Graph shows the relative file size of all events hourly on the specified date. When we move the mouse pointer over each sector, the exact file size of events will be displayed.

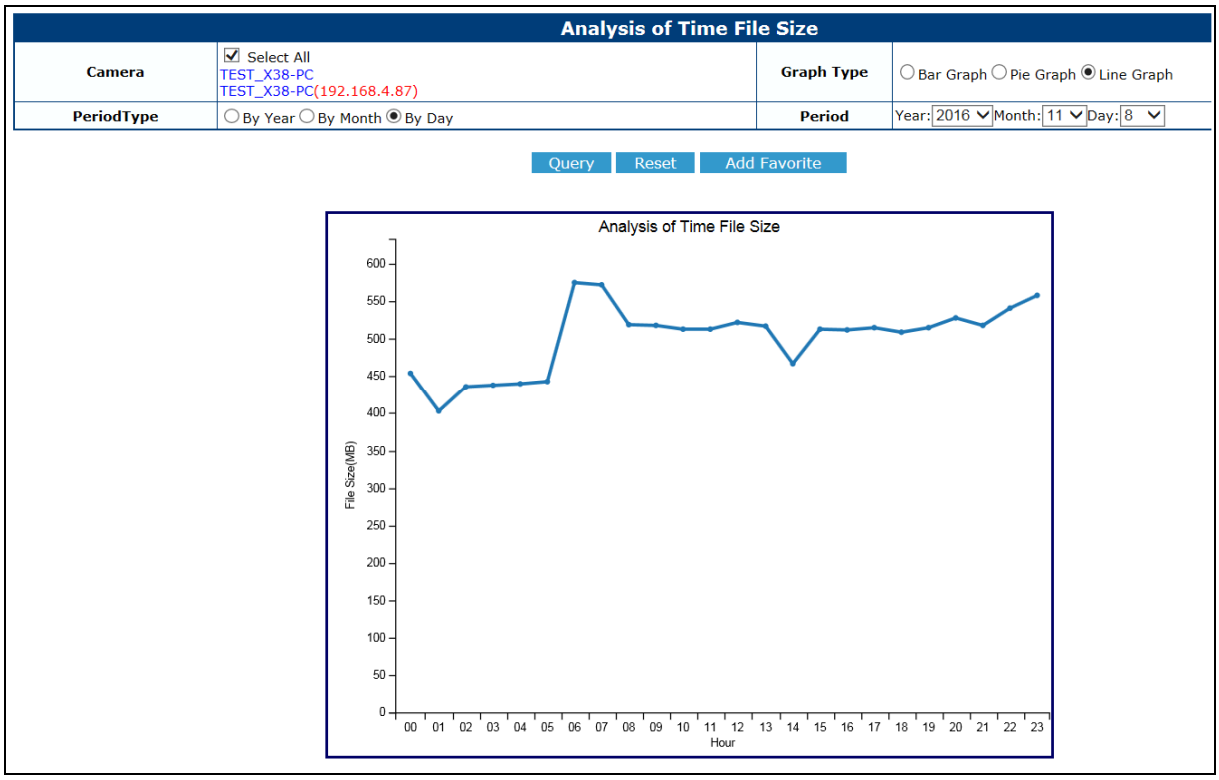


Figure 5-10

Chapter 6 Remote Playback

You can play back the recordings backed up in the GV-Backup Center remotely using the GV-Remote ViewLog program. For remote playback to work, ensure **ViewLog Service** on the GV-Backup Center has been enabled. And you need to install the program from the Software DVD or download it on the GeoVision website.

6.1 Connecting through Remote ViewLog Program

6.1.1 Remote ViewLog V1

1. When Remote ViewLog V1 is started, select **Remote ViewLog Service** on the pop-up selection. This dialog box appears.

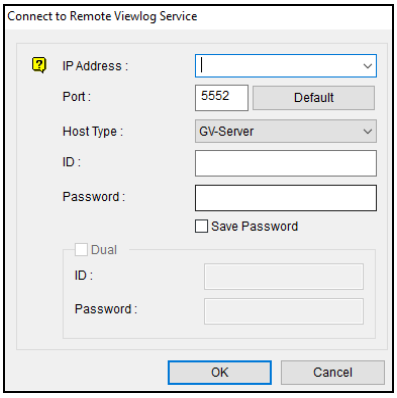


Figure 6-1

2. In the Host type, select **GV-Server**. Type the IP address, login ID and password of the GV-Backup Center. Keep the default port **5552** or modify it if necessary.
3. Click **OK**. The recorded files of the GV-Backup Center are ready for playback.

Figure 6-2

6.1.2 Remote ViewLog V2

1. On the login page of Remote ViewLog V2, you can log in by either using the default account admin and password admin or creating a new login credential.

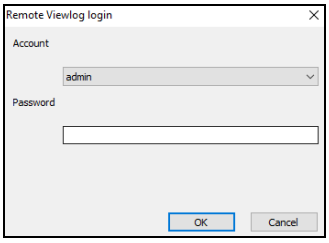


Figure 6-3

2. Once logged in, the Add New Host dialog box appears. Select **GV-Backup Center** for **Host Type**, and type a desired name and the IP address of the GV-Backup Center. Keep the default port **5552** or modify it if necessary. Click **OK**.

Figure 6-4

3. When the connection is established, you will see the cameras from the GV-Backup Center shown on the camera list. Drag and drop the desired cameras from the list to the playback screen.

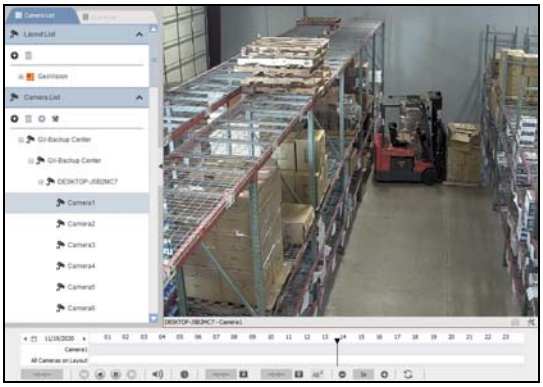


Figure 6-5

For details on the playback functions, see Chapter 4 Video Playback, *GV-VMS User's Manual* and *GV-DVR / NVR User's Manual* respectively.

Chapter 7 Media Man Tools

The Media Man Tools program provides a hot-swap feature, allowing a non-stop recording. You can remove a hot-swap or portable hard drive from the GV-Backup Center Server without interrupting the backup.

Note: The minimum disk capacity for hot-swap feature is 32 GB.

7.1 The Media Man Tools Window

This program comes with the installation of GV-Backup Center. Click **Backup Center** from the **Start** menu, and select the **Media Man Tools**. Type the ID and Password of your GV-Backup Center. This window will appear.

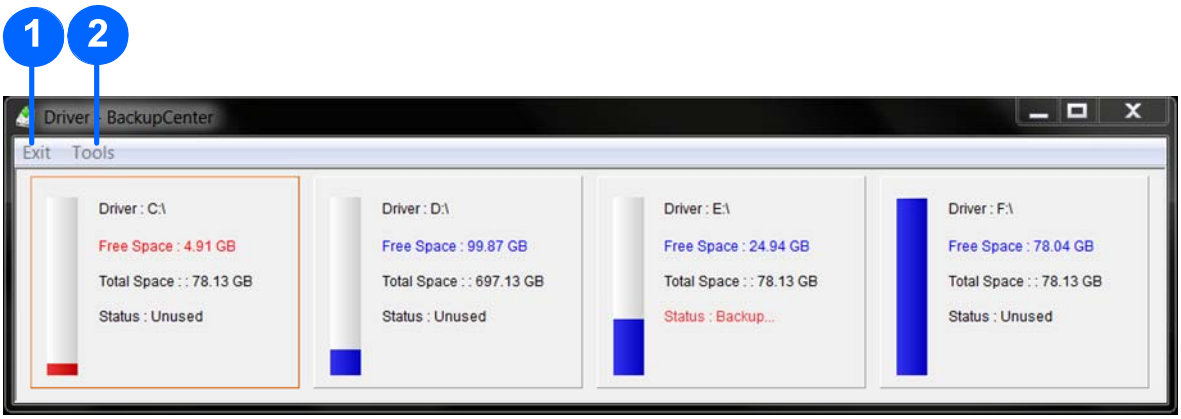


Figure 7-1

The controls on this window:

No	Name	Description
1	Exit	Closes or minimizes the Media Man Tools window.
2	Tools	Sets up the LED panel and automatically logs in the Media Man Tools window. See *7.3 Setting LED Panel*.

7.2 Adding a Disk Drive

When the Media Man Tools detect a new HDD, a dialog box will pop up allowing you to add the HDD to the backup path. If you click **OK**, the HDD will be displayed on the Media Man Tools window. For example, Driver H is a new HDD added to the backup path.

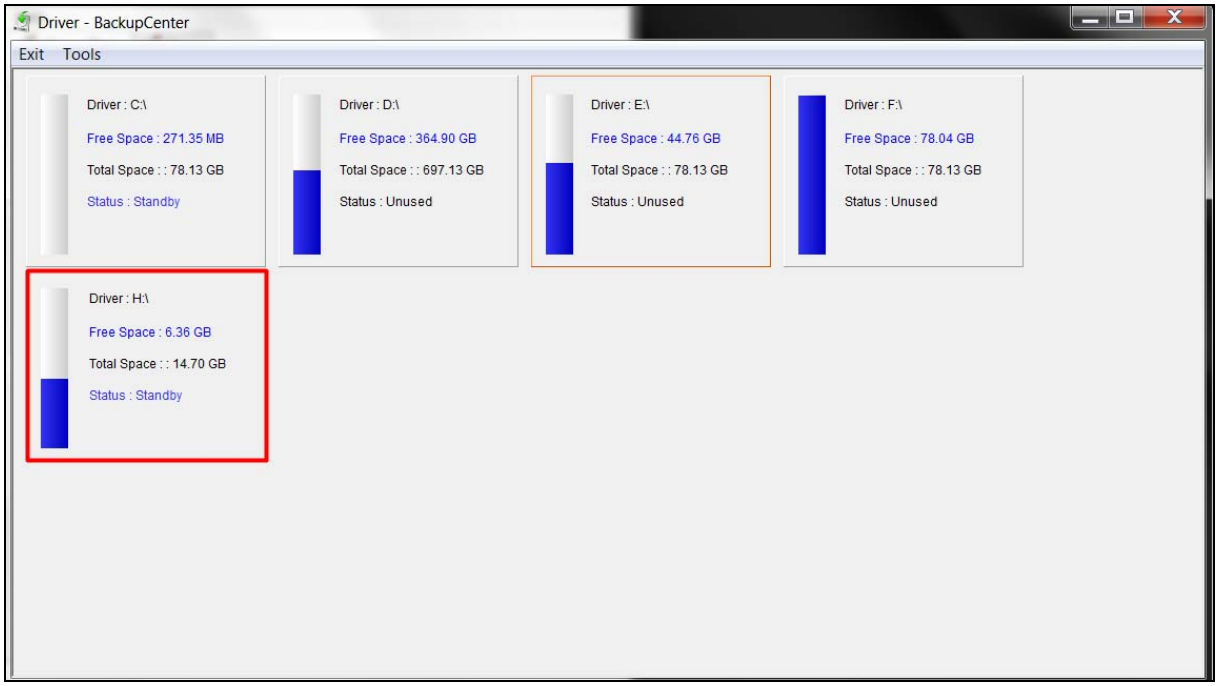


Figure 7-2

7.3 Removing a Disk Drive

To remove a disk drive from the backup path, right-click the desired drive on the Media Man Tools window (Figure 7-1), and select **Remove Storage**.

7.4 Setting LED Panel

A LED panel on the screen provides a quick indication of the activity status of hard disk drives.

Figure 7-3

LED Color	Description
Gray	No HDD is assigned to this LED.
Green	A HDD is assigned to this LED.
Red	The HDD is full.
Flashing Blue	GV-Backup Center is receiving files.
Flashing Red	The HDD is recycling.

1. Click **Tools** on the menu bar on the Media Man Tools window, and select **Setup LED Panel**. This dialog box appears.

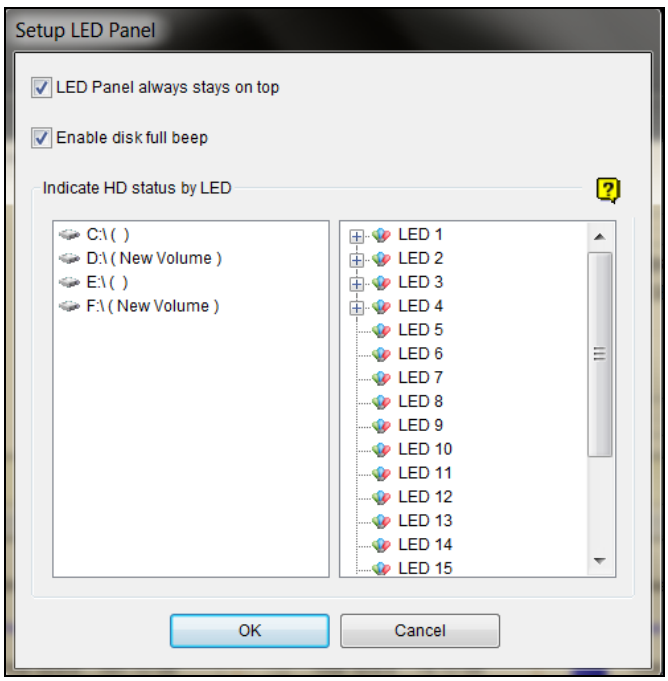


Figure 7-4

- **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.
- **Enable disk full beep:** When the hard disk drive is full, the system makes the beeping sound. Note this function only works when the motherboard is equipped or installed with a PC speaker.

2. By default, only the hard disk drive that stores video and audio files will be assigned to LED. If you want to re-assign the hard disk drive or assign other drives to LEDs, freely move the hard disk drive to the desired LED on the tree.
3. Click **OK** to apply the settings, and minimize the Media Man Tools window to display the LED panel on the screen.
4. If you want to return to the Media Man 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 database is assigned to a LED and its LED turns red, make sure the database is not being written before you remove it. Otherwise, the database might be lost during the removal. To modify the storage path of GV-Backup Center's database, see *4.4 Database Settings*.

Specifications

See details in Datasheet GV-Backup Center.

Appendix

A. Modifying Port Number for running GV-Backup Center on the same computer with GV-DVR / NVR and GV-VMS

Since the **GV-Backup Center** and the **WebCam Server** of GV-DVR / NVR and GV-VMS use the same HTTP port number of 80 to connect to the Web, it is required to modify the port number of either GV-Backup Center or WebCam Server if both are run on the same computer. If not, the following message will appear and you cannot access the Web interface of GV-Backup Center:

Starting Web Server Failed

To modify the HTTP port number of GV-Backup Center:

1. Click **Tools** from the menu bar and select **General Setup**.
2. Change the listen port of **Web Server** from 80 to a different port number, e.g 81.
3. Click **Apply**.

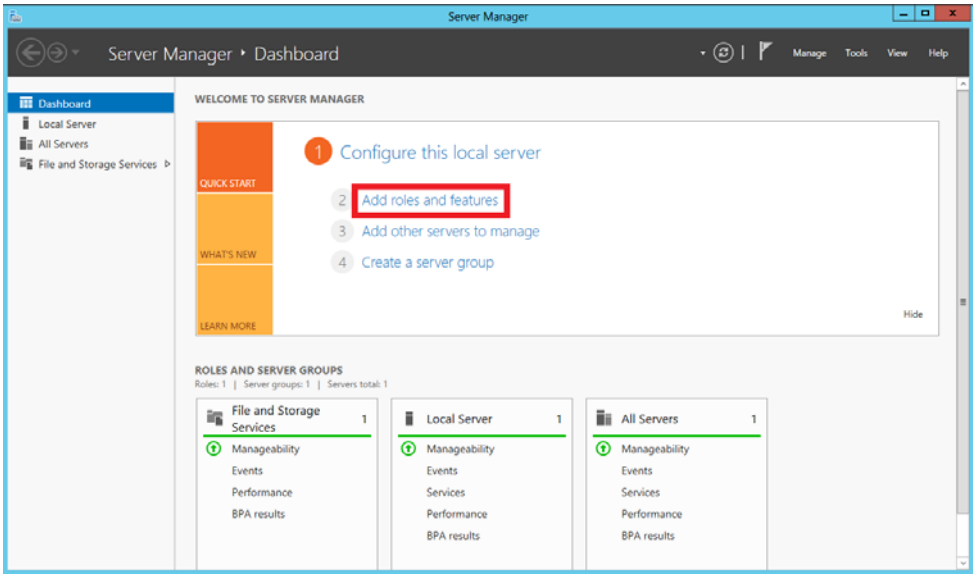
B. Installing .Net Framework 3.5 for Windows 10 / Server 2016

Follow the steps below to manually install **.Net Framework 3.5** for Windows Server 2016 and Windows 10.

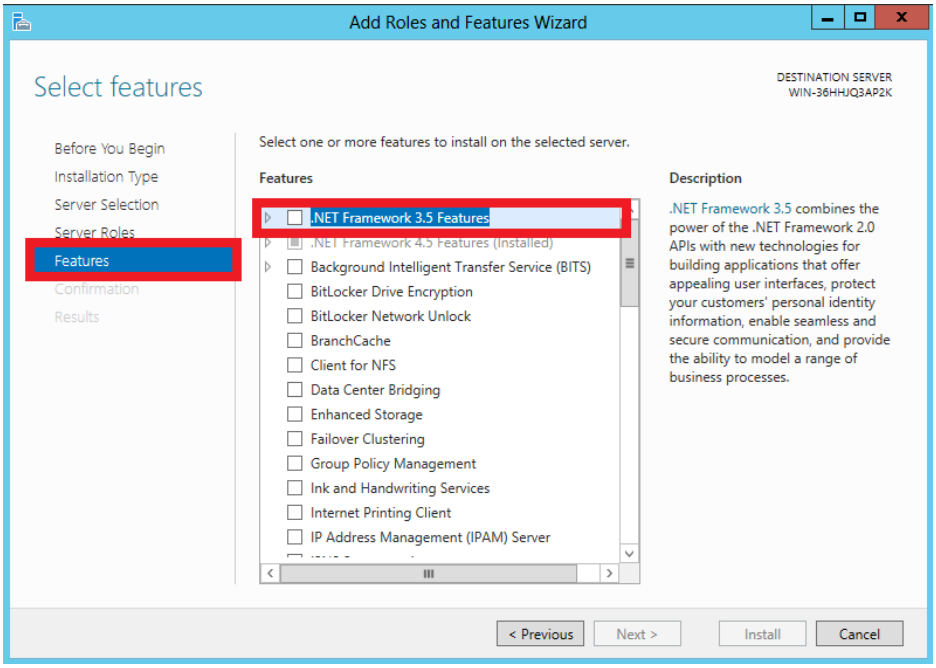
Windows Server 2016:

1. Open **Server Manager** from the Start menu.

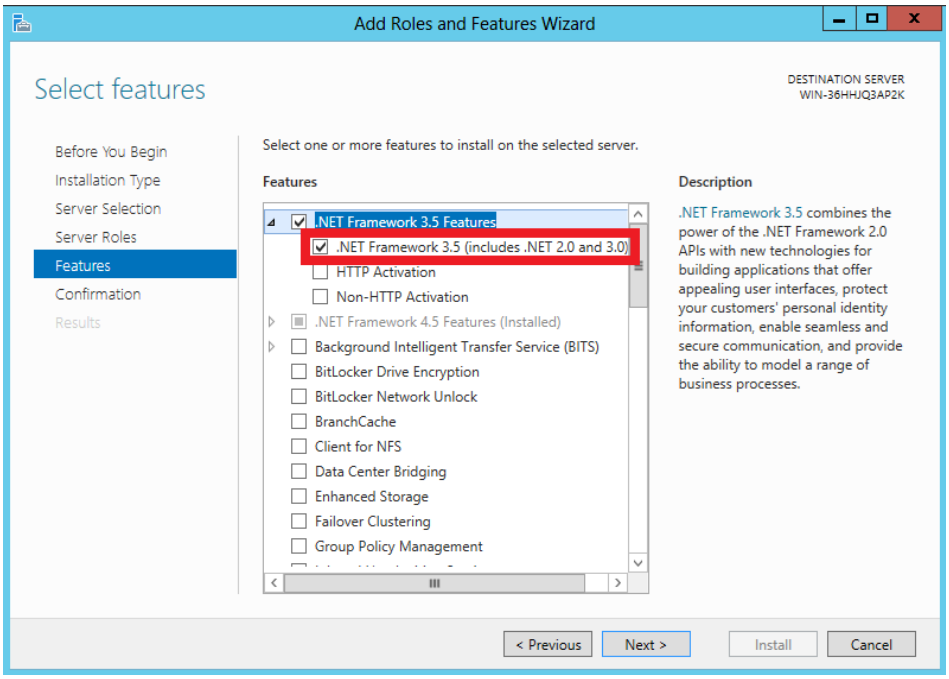
2. Click **Dashboard** from the tree list on the left and click **Add roles and features**.



3. Click **Features** from the tree list on the left and select **.Net Framework 3.5 Features**.



4. Select **.Net Framework 3.5 (include 2.0 and 3.0)** and click the **Install** button.

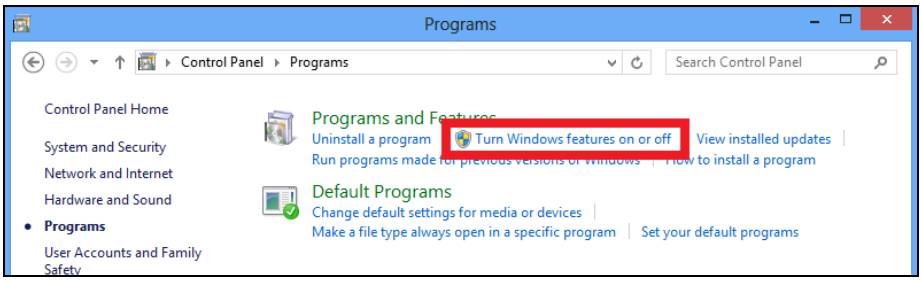


Windows 10

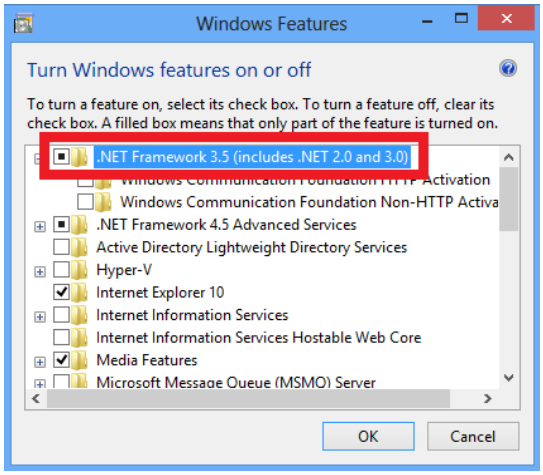
1. Click **Control Panel** from the Start menu.

2. Click the **Programs** icon.

3. Select **Turn Windows features on or off** under the Programs and Features title.



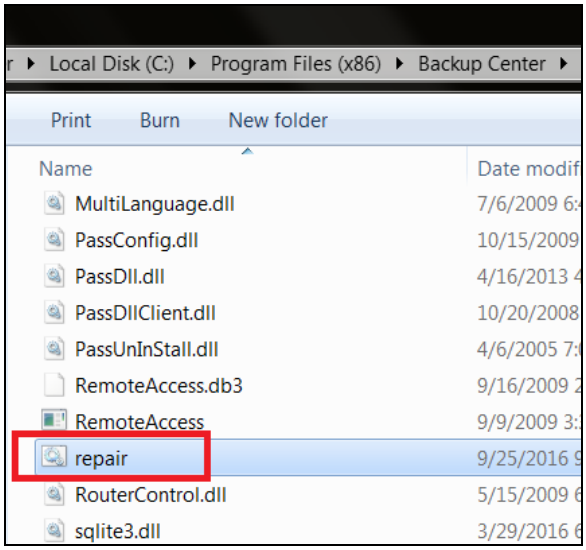
4. Select **.Net Framework 3.5 (includes .Net 2.0 and 3.0)** and click the **OK** button.



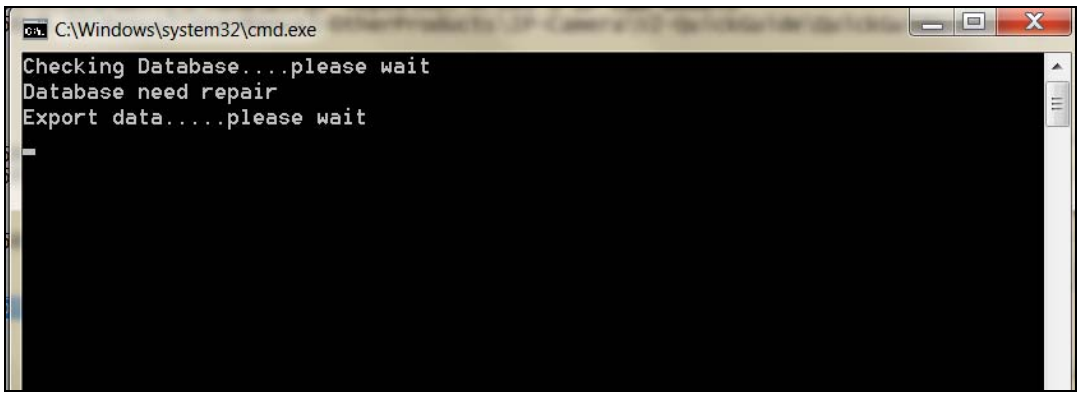
C. How to Repair the Database

The database may be damaged if GV-Backup Center is abnormally shutdown. In this case, you can use the DB Repair Tool to repair the database. The DB Repair Tool comes with the installation of GV-Backup Center. Follow the steps below to locate the DB Repair Tool.

1. Close the GV-Backup Center completely.
2. Open the Backup Center folder (default: *C:\program files* (x86) > Backup Center) and find the Repair tool.



3. Double-click **repair** to run the repair process.



The DB Repair Tool program will automatically start the repair process, which would take a few minutes to complete.