GeoVision inc
The Vision of Security

GV-NAS System

User's Manual

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

NASV101-UM-B

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Chapter 1 Introduction

GV-NAS System is a Linux-based, network-attached storage device designed to store GV-IP Camera recordings. GV-NAS System features RAID to ensure data security, rendering data recovery possible. Allowing access from multiple users over multiple platforms (mobile devices and desktop), user accessibility is customizable, keeping your data secure. Management over a mass number of GV-IP Cameras is made easy with GV-Edge Recording Manager, which provides an integrated interface where you can assign recordings to the designated folder in GV-NAS Systems.

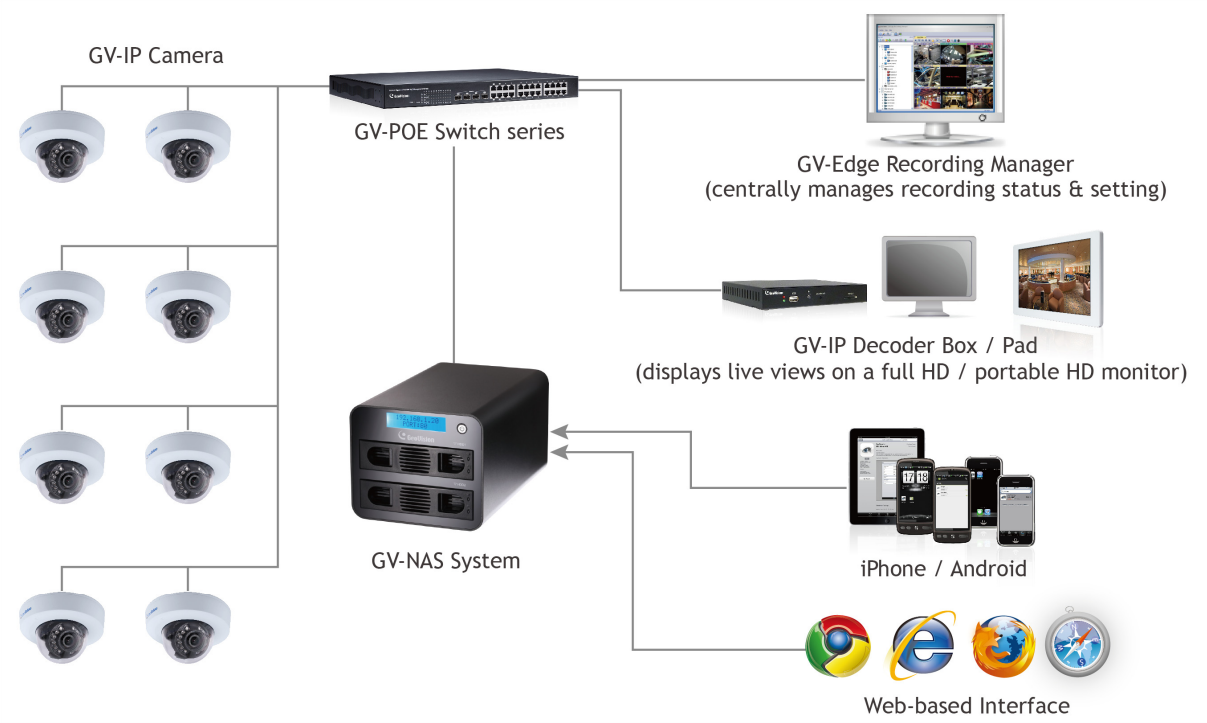


Figure 1-1

1.1 Models

The GV-NAS System is available in four models. Their major differences are detailed below.

Model Number	Product Photo	Product Description		
		No. of Bay	Data Storage Type	Max. No. of Channels
GV-NAS2008		2	RAID 0/1/JBOD	8
GV-NAS2016		2	RAID 0/1/JBOD	16
GV-NAS4008		4	RAID 0/1/JBOD	8
GV-NAS4016		4	RAID 0/1/5/JBOD	16

1.2 Features

Models / Features	GV-NAS2008	GV-NAS2016	GV-NAS4008	GV-NAS4016
Low power consumption	✓			
Compact size	✓			
LCD display	✓			
Recording assigned by GV-Edge Recording Manager	✓			
Hot-swappable drive bays	2	2	4	4
Max. storage capacity (TB)	8	8	16	16
Data storage type	RAID 0, RAID 1, JBOD			RAID 0, RAID 1, RAID 5, JBOD
Max. no. of recording channels	8	16	8	16
Smart device access for playback	✓			
3rd Party IP Cameras Recording	✓			

Note: The maximum numbers of recording channels are based on 5 minute recording interval, default recording quality setting (**Good**) and a constant bitrate 6 Mbit at maximum.

1.3 Packing List and Package

You can choose to purchase a GV-NAS System package or a bundled package which also includes 4 GV-Target IP Camera of your choice and a GV-PoE switch.

Package Options:

- Single Package
- Bundled Package

1.3.1 GV-NAS System Single Package

- GV-NAS System
- 1 M network cable
- DC 12V, 5A power adapter
- Power cord
- Software CD
- GV-NAS System Quick Start Guide

1.3.2 Bundled Package for GV-NAS2008

- GV-NAS System Package x 1
- Target IP Camera x 4
- GV-POE400 x 1

Note: For the Target IP Camera, select any 4 models from GV-EBL1100 / 2100, GV-EBX1100 / 2100, GV-EDR1100 / 2100, GV-EFD1100 / 2100. For more information, contact our sales representatives.

1.4 System Requirements

Tested and Suggested Web Browsers and Versions

- Internet Explorer 8 or later
- Google Chrome 33.0.1750.154
- Mozilla Firefox 28
- Safari for Windows 5.1.7
- Safari for MAC 6.0.5

Recommended Hard Disks

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

Note: GV-NAS is designed for 3.5'' hard drive disks (2.5'' ones are not supported), each at the maximum of 4 TB.

Supported IP Cameras

GV-NAS System supports the following IP cameras.

- GV-EBL1100 / 2100 (GV-Target Series V1.02 or later)
- GV-EBX1100 / 2100 (GV-Target Series V1.02 or later)
- GV-EDR1100 / 2100 (GV-Target Series V1.02 or later)
- GV-EFD1100 / 2100 (GV-Target Series V1.02 or later)
- GV-IP Camera (V3.00 or later)
- 3rd Party IP Cameras with NAS Recording Function (See *Supported IP Cam List* on our website.)

1.5 Panel Overview

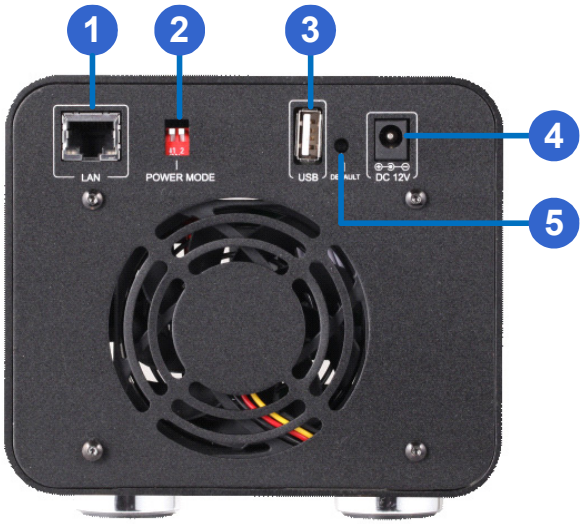
Front Panel

GV-NAS2008/2016 **GV-NAS4008/4016**

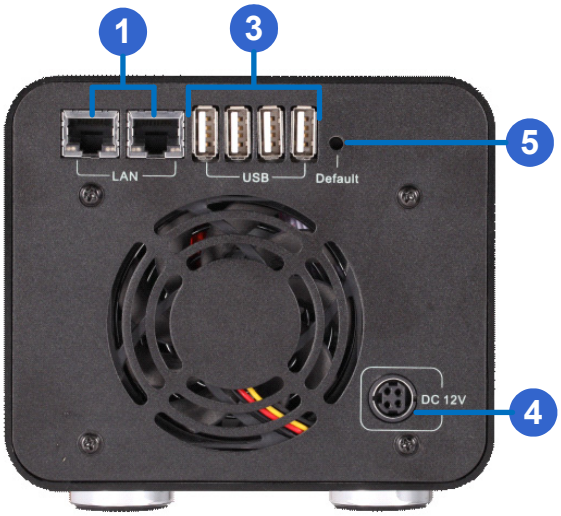
Figure 1-2

No.	Name	Description
1.	LCD Panel	Displays the device's IP address, port setting, MAC address, motherboard temperature and CPU temperature. Press the power button to switch the displayed information.
2.	Power	Press the power button to turn the device on.
3.	Drive Bays	Load hard disk drives. The GV-NAS2008/2016 is equipped with 2 drive bays and the GV-NAS4008/4016 is equipped with 4 drive bays. The blue LED turns on when the holder is loaded with a hard disk. The red LED (GV-NAS2008/2016) or orange LED (GV-NAS4008/4016) turns on when files are being accessed or written.

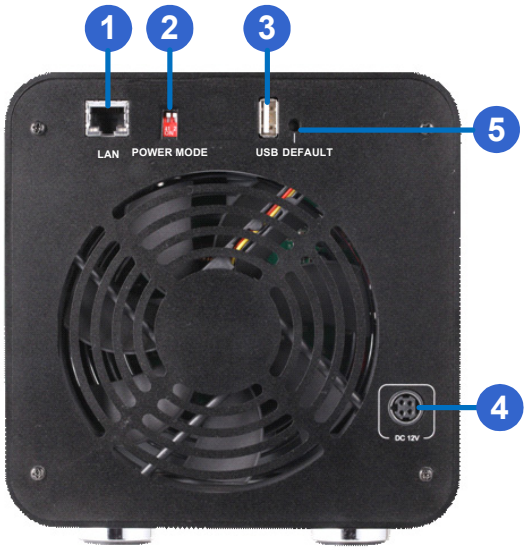
Rear Panel



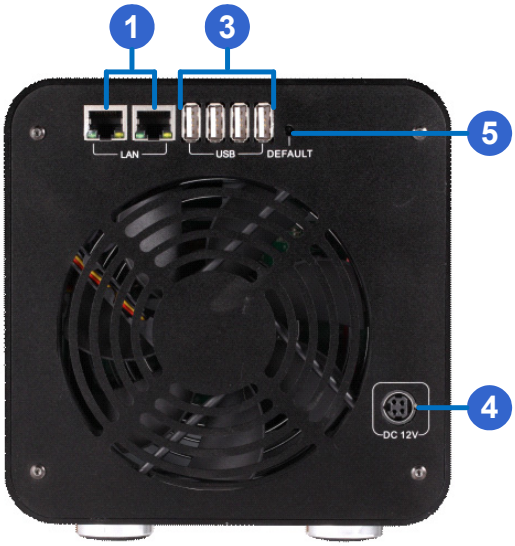
GV-NAS2008



GV-NAS2016



GV-NAS4008



GV-NAS4016

Figure 1-3

No.	Name	Description
1.	Gigabit LAN	Connects to 10/100/1000 Mbps Ethernet.
2.	Power Mode	Sets the system status (on or off) when power resumes after a power failure. Press Switch 1 up to have the system turned on when power resumes; press Switch 1 down for the system to remain off when power resumes. Switch 2 is not functional.
3.	USB Port	Connects to external USB storages or USB printers.
4.	DC 12V Port	Connects to power.
5.	Default	Press for 10 seconds to reset the device to default settings. The device will restart while loading default settings.

1.6 Installing the Hard Disks

The GV-NAS System's disk drives are hot-swappable. You can install or replace hard drives while the system is running. Follow the steps below to install a hard disk.

1. Press and pull out the disk holder. For GV-NAS4008/4016, the top of the disks should face the right.

Figure 1-4 Two-Bay GV-NAS System

Figure 1-5 Four-Bay GV-NAS System

2. Remove the clips on both sides.

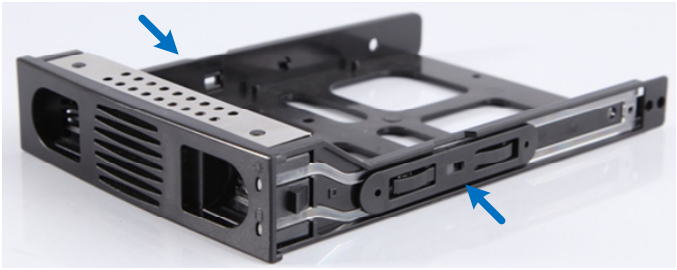


Figure 1-6

3. Put the hard drive into the disk holder. Your hard disk should fit perfectly with the connector pins facing the back.

Figure 1-7

4. Re-install the clips to secure the disk to the holder. Press the middle of the clip first and then the sides.

Figure 1-8

5. Follow step 1 to re-install the disk holder.

Chapter 2 Getting Started

2.1 Looking Up the IP Address

By default, the IP address of GV-NAS System is assigned by the DHCP server when the system is connected under a LAN environment. To find the IP address:

- look up from the system's LCD panel, or
- browse for the device using the GV-NAS System Utility included in the software CD

2.2 Accessing the GV-NAS System

1. Find the system's IP address from the LCD panel or using the GV-NAS System Utility. For details, see *2.3 The GV-NAS System Utility*.
2. Type the IP address into your Web browser and press **Enter**. This page appears.

Figure 2-1

3. Type the user name, password and the verification code to log in. The default user name and password are both **admin**.

Note: If the GV-NAS System is installed behind a firewall or router, you may need to open these default ports: HTTP port 80, FTP port 21, Ajaxplorer port 8090, Web Server port 8060, Cloud Printing Service port 9100 and E-mail notification port 465 (for example: Google's SMTP).

2.3 The GV-NAS System Utility

You can also use the utility software included on the software CD to find the IP address.

1. Execute the file **GV-NAS System Utility.exe**. This dialog box appears.

Figure 2-2

2. Click **Search** to start searching the GV-NAS System under the same LAN. This dialog box appears, showing the devices found and the network settings (IP address).

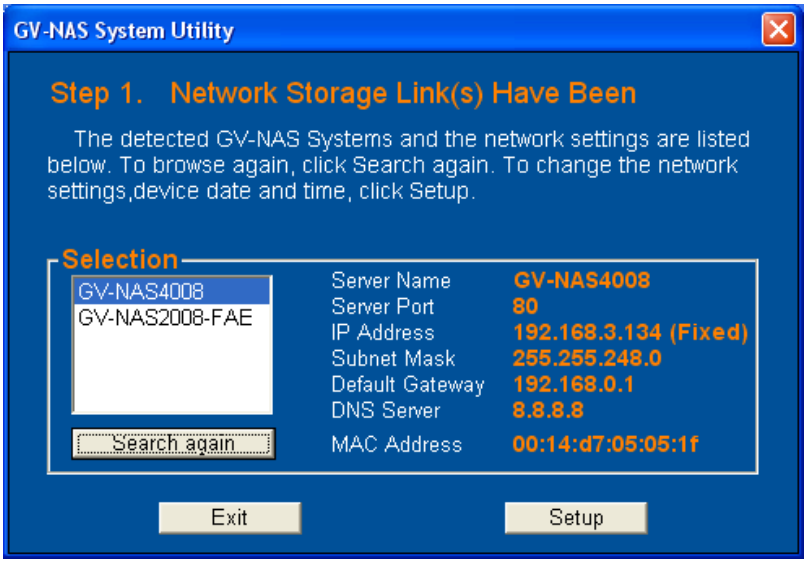


Figure 2-3

3. If your device does not show up, click **Search again** to browse again.

4. To configure the GV-NAS System's network settings, device date and time, click **Setup** and type the password.

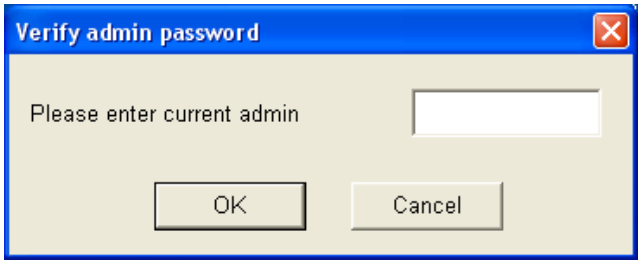


Figure 2-4

Note: This setup will take you through the basic configurations of the device without an Internet browser. Be advised the system must have at least one formatted volume in order to proceed or this window will appear:

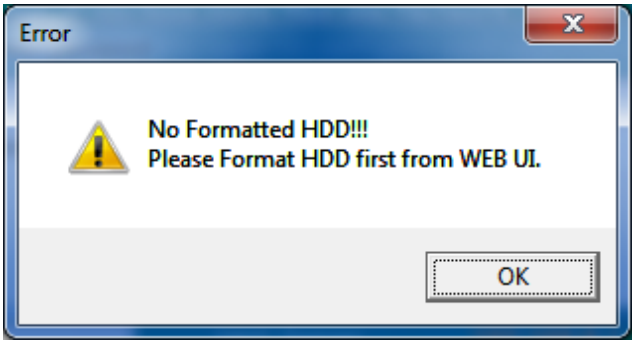


Figure 2-5

2.4 Creating RAID

GV-NAS System supports single disk formatting, linear (JBOD), RAID 0, RAID 1 and RAID 5 setup. Follow the steps below to format or create RAID to your disk drives.

Note: RAID 5 is only supported by GV-NAS4016.

---

1. Upon entering the user interface, you are prompted to format the inserted hard disks. The applications (except the Disk & RAID Management) are only accessible with at least one formatted disk.

Figure 2-6

2. Click **OK** on the warning message. This window appears. The Single / RAID column indicates the status of the mounted hard disks. In this case, they have not been formatted yet.

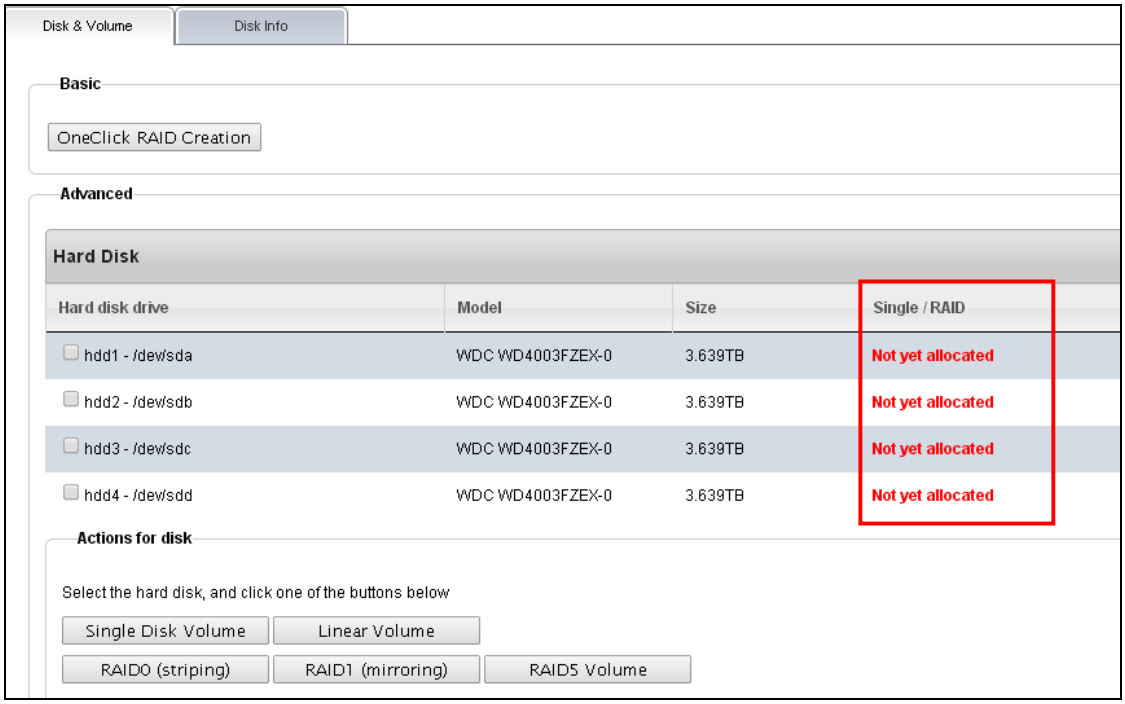


Figure 2-7

3. To create RAID, you have two options:

- **Automatic setup:** RAID is created based on the number of inserted disks. A single disk will be formatted individually; two disks will be formatted to RAID 1; three disks or more will be formatted to RAID 5. Click **One Click RAID Creation** to start this setup.
- **Manual setup:** Manually select the hard disk drives and then click **Single Disk Volume**, **Linear Volume**, **RAID 0**, **RAID 1** or **RAID 5**.

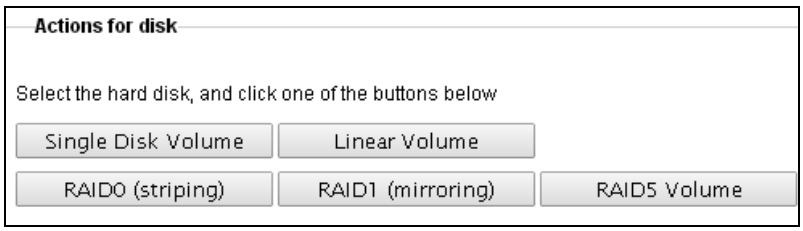


Figure 2-8

Data Storage	Description
Single Disk Volume	• The selected disk drive will be formatted individually. • This mode requires **only one disk** at a time. • If a 1 TB and a 3 TB disk are formatted individually, forming two logical disk volumes, at a total storage space of 4 TB.
Linear Volume (JBOD)	• Two or more disk drives are combined to form one logical volume. • This mode requires **two or more disks** at a time. • The storage capacity will be the total disk space of all disk drives. For example, a 1 TB and a 3 TB disk will form one logical disk volume with 4 TB storage capacity.
RAID 0 Mode	• The storage is striped in which data is spread evenly across two or four drives to provide a better system performance. • This mode requires **two or four disks** at a time. • The storage capacity will be the capacity of the smallest disk drive times the number of disk drives. For example, a 1 TB and a 3 TB disk will form one logical disk volume with 2 TB storage capacity (1 TB x 2 disks = 2 TB).
RAID 1 Mode	• The storage is mirrored in which the data is saved to one drive and duplicated to another drive. This mode provides data protection when one hard drive fails. • This mode requires **at least two disks**. • The storage capacity will be the capacity of the smallest disk drive. For example, a 1 TB and a 3 TB disk will form one logical disk volume with 1 TB storage capacity.
RAID 5 Mode	• This mode offers data protection while minimizing storage waste. Data are carefully arranged and spread evenly into all the RAID 5 drives, in case when one drive fails, data can be rebuilt using the remaining working drives. • This mode requires **at least 3 disks**. Note this mode only allows one drive failure. If more than one drive fails, data will not be recoverable. • The storage capacity will be (the size of the smallest drive) x (number of drives -1). For example, if you have three 2 TB drives and one 1 TB drive, the total capacity will be 1 TB x (4 – 1) = 3 TB. It

	is recommended to use the three 2 TB drives to form RAID 5 and the 1 TB drive as a single volume. In this case, you will get 2 TB x (3 – 1) = 4 TB RAID 5 system and another 1TB single volume. This organization provides a 5 TB storage space as opposed to the 3 TB capacity. The rule of thumb is to use drives of the same capacity for RAID system as much as possible.

4. The formatting starts immediately. The system reboots when the formatting is completed.
5. Optionally configure the disks from the Disk & RAID Management window.

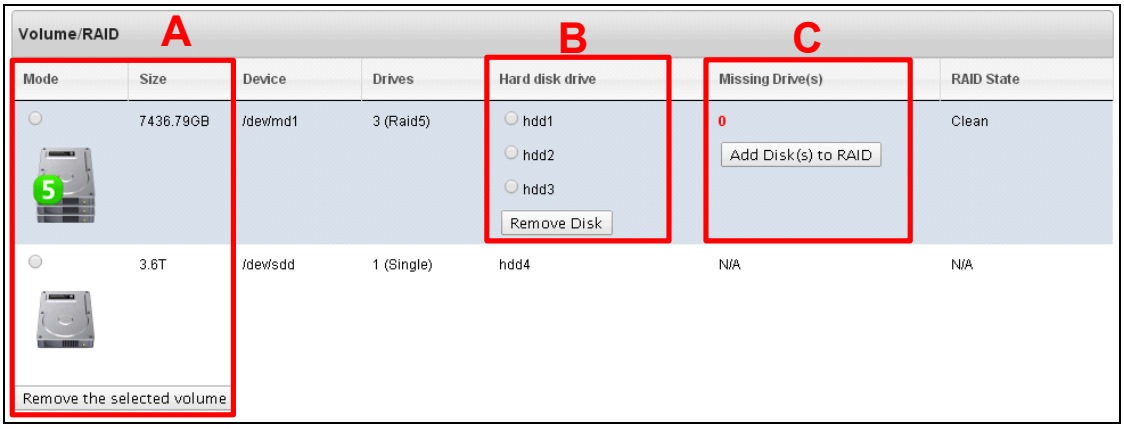


Figure 2-9

A. To remove a formatted volume, select a volume from the Mode column and click **Remove the selected volume**.

B. To remove a disk from a RAID group, select a disk from the Hard Disk Drive column and click **Remove Disk**.

C. To add another disk to a RAID group, click **Add Disk(s) to RAID**.

IMPORTANT:

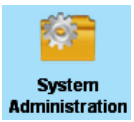
1. Depending on the size of the hard disks, GV-NAS System may take varying amount of time to establish and rebuild RAID.
2. Make sure the power supply is stable during the formatting. Power failure during formatting may cause permanent damage to the system, rendering the device unusable.

2.5 The Web Interface (Desktop)

The desktop contains access (icons) to many applications and management tools. Click the icons to access them.

Figure 2-10

For details on each application, refer to the corresponding section in this manual.

	2.4 Creating RAID *2.6 Network Settings*
	*System Administration*, Chapter 3
	4.1 Disk & RAID Management
	4.2 Access Rights Management
	4.3 Network Services
	4.4 Ajaxplorer
	4.5 DLNA Media Server
	4.6 iTunes Media Server
	4.7 WebServer
	4.8 Power Management
	4.9 External Device
	4.10 System Status

You can keep multiple windows open at the same time. To minimize all the windows, click the **Show Desktop** button on the bottom-left corner of the desktop:

Figure 2-11

To power off, reboot or log out of the system, click the home icon on the top-left corner of the desktop and select from the drop-down list. Click the home icon again to close the list.

Figure 2-12

2.6 Network Settings

By default, GV-NAS System is randomly assigned with an IP address by the DHCP server when it is connected to the network. However, if the server does not support DHCP, the GV-NAS System will be assigned with the IP address **http://192.168.0.200**. In this case, we recommend you to change this default IP address to avoid IP conflict with other GV-IP Devices.

2.6.1 Setting Up a Fixed IP Address

1. From the desktop, click **Quick Start**. This page appears. By default, DHCP is enabled and the assigned IP address is shown.

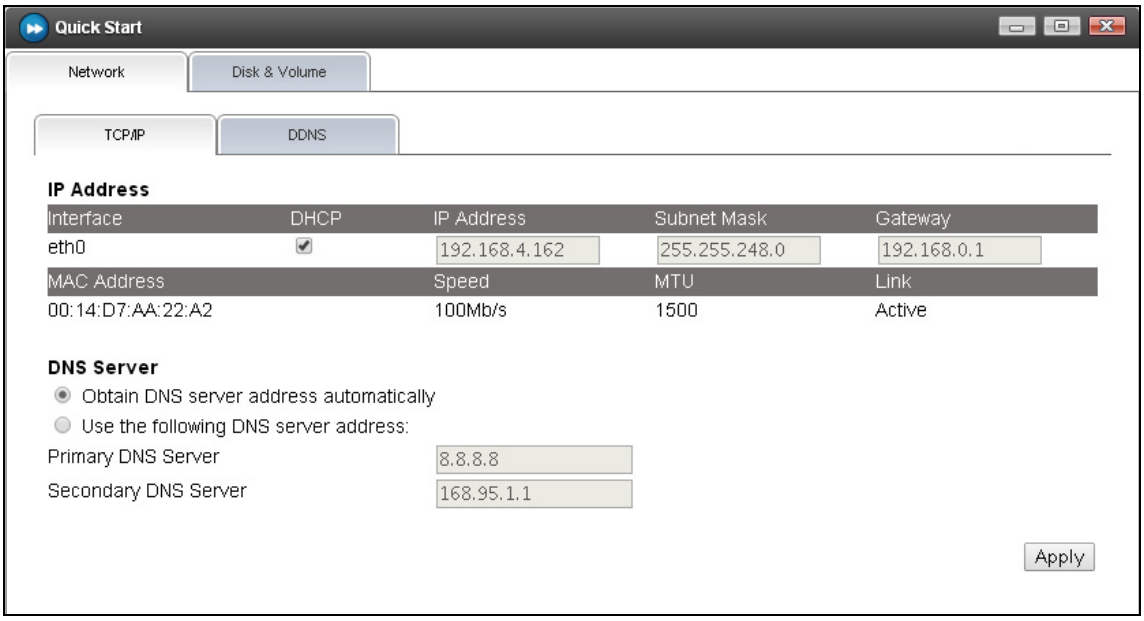


Figure 2-13

2. To change to a fixed IP address, unselect **DHCP** and configure the **IP Address**, **Subnet Mask** and **Gateway**.
3. Under Use the following DNS server address, configure the **Primary DNS Server** and **Secondary DNS Server** addresses.
4. Click **Apply** to save the settings.

Note: Make sure the IP address does not conflict with other devices in a LAN environment.

2.6.2 DDNS Settings

The DDNS service is used to generate a static domain name which links to the dynamic IP address of a device, disregarding how the IP address changes. The user can then access the device with this domain name without looking up the IP address. To obtain a domain name for GV-NAS System, follow the steps below:

1. On the desktop, click **System Administration**, select **Network** and then select **DDNS**. This page appears.

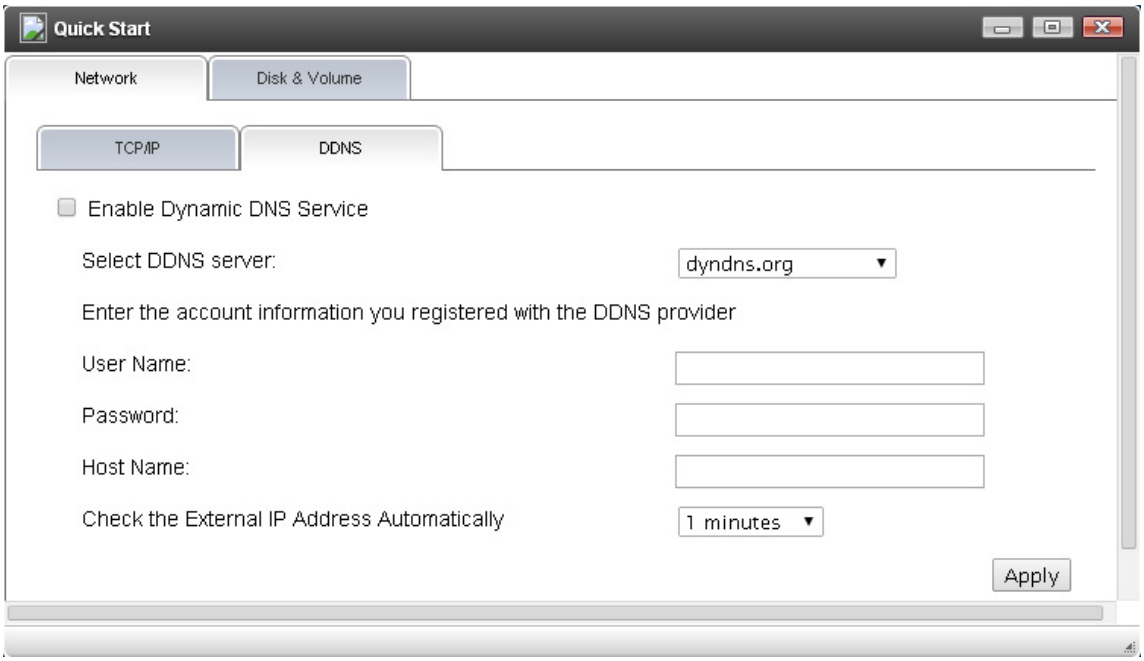


Figure 2-14

2. Apply for a host name from one of the supported DDNS service providers.

Figure 2-15

3. Select **Enable Dynamic DNS Service** and select the DDNS server you registered using the drop-down list.

4. Type the user name, password and host name of the GV-NAS System you registered for the DNS service.
5. Use the **Check the External IP Address Automatically** drop-down list, select how frequent you want the device to refresh itself for the latest IP address. The default is **1 minute**.
6. Click **Apply**.

2.7 Recording GV-IP Cameras to GV-NAS System

By default, GV-NAS system contains a shared folder **IP_Camera**, 8 user accounts **Cam01** to **Cam08** for GV-NAS2008 / 4008, and 16 user accounts **Cam01** to **Cam16** for GV-NAS2016 / 4016. For better account management and easier data retrieval on NAS system, it is recommended to assign each GV-IP Camera to a user account and designate their recordings to the **IP_Camera** shared folder.

Follow the steps below to save your GeoVision IP Camera recordings to GV-NAS System. Note that this function is only supported for GV-Target Series (V1.02 or later) and GV-IP Cameras (V3.00 or later).

1. From the GV-IP Camera's Web interface, select **Management** and then **Storage Settings**. This page appears.

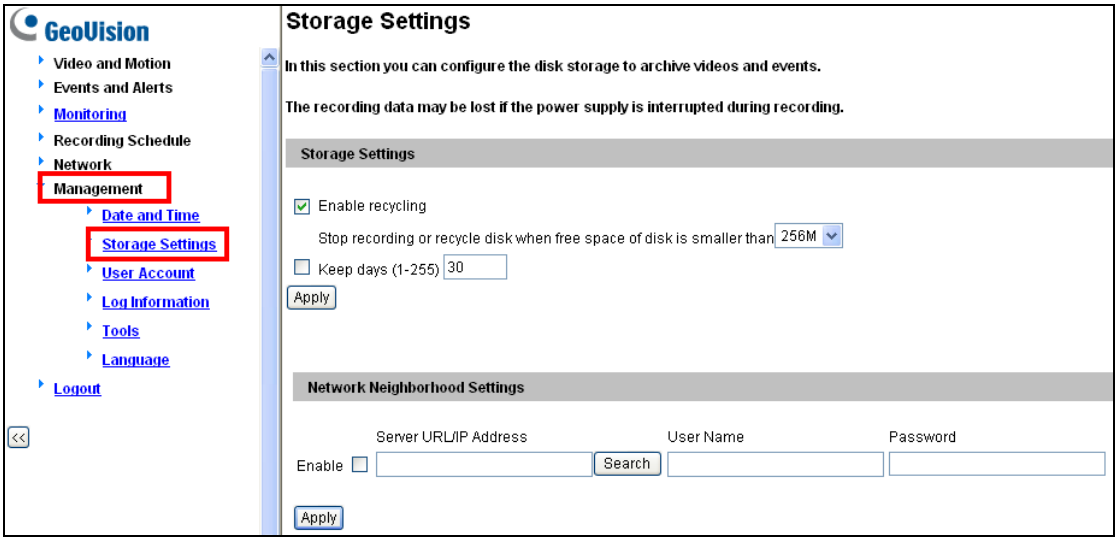


Figure 2-16

2. Optionally configure the Recycle and Keep Days settings. The files recorded to the GV-NAS System will be stored based on these criteria. For details, see *GV-IPCAM H.264 User's Manual* on the Software CD.

3. Assign a storage location under the GV-NAS System.

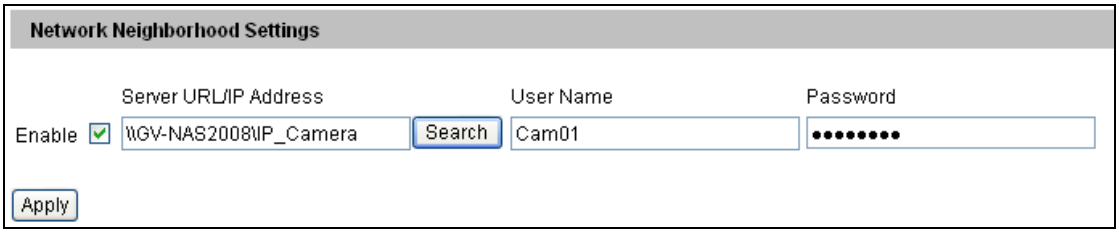


Figure 2-17

A. Select **Enable**.

B. Type the URL/IP Address (or NAS Server name) in this format **\\IP address (or NAS Server Name)\IP_Camera**. As illustrated, this GV-IP Camera will be recorded to the shared folder “IP_Camera” in GV-NAS System.

C. Type a User Name and the password. For details on default username and password, see *Appendix A – Default Settings*.

Note: Alternatively use the **Search** button to browse for a GV-NAS System and folder.

A. Make sure **GV-NAS 2008** can be detected from your Windows Network.

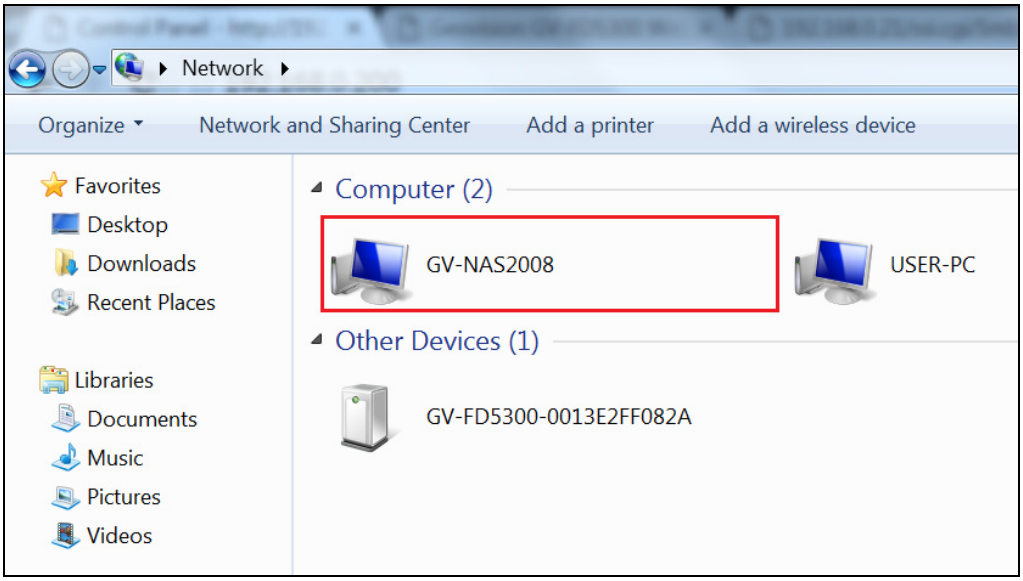


Figure 2-18

B. Click the **Search** button to browse for the GV-NAS System. This page appears.

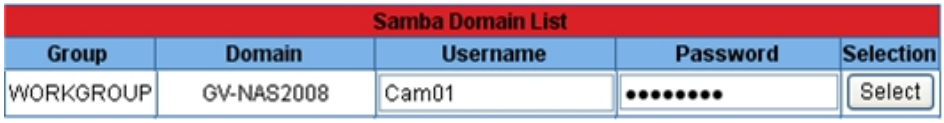


Figure 2-19

C. Type the username and password, and click **Select**. This page appears.

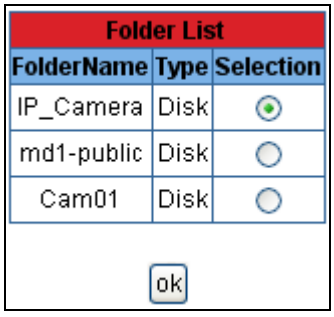


Figure 2-20

D. Select a folder and click **OK**.

4. To record another GV-IP Camera to GV-NAS System, repeat steps 1 to 3 and select a different user account.

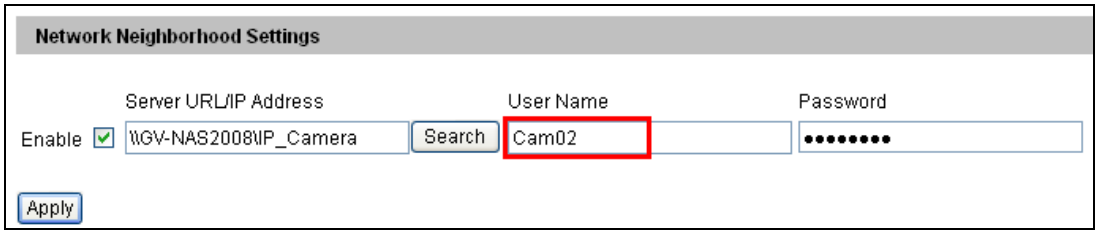


Figure 2-21

IMPORTANT: Since the storage limitation and recycle is applied on a user basis, it is recommended to use one user account exclusively for recording (file writing) of one GV-IP Camera to avoid uneven data recycling.

5. Click **Apply**. After 10-15 seconds, **Network Neighborhood Disk information** will show the disk status of GV-NAS System, which indicates the connections are established successfully.

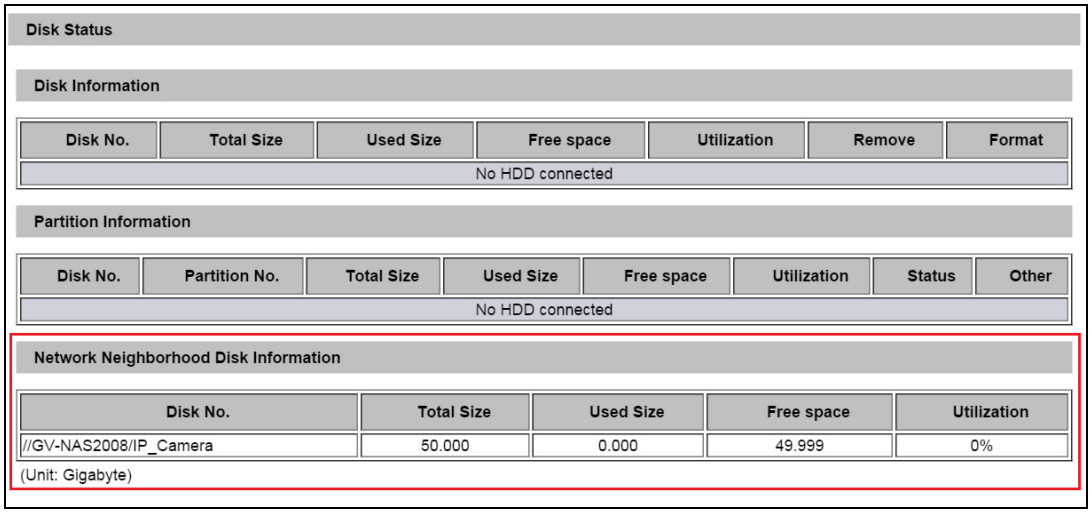


Figure 2-22

6. From GV-IP Camera's Web interface, click **Monitoring** and select **Start** to start recording to the GV-NAS System.

To change the user name or create more users, see *4.2.1 Users*. To create more shared folders, see *4.2.3 Shared Folder*.

2.8 Playing Back Recordings from GV-NAS System

You can play back recordings saved at your GV-NAS System on a computer or on your mobile device.

2.8.1 Playing Back on a Computer

1. On GV-NAS System's Web interface, click **Ajaxplorer**. The Ajaxplorer dialog box appears.

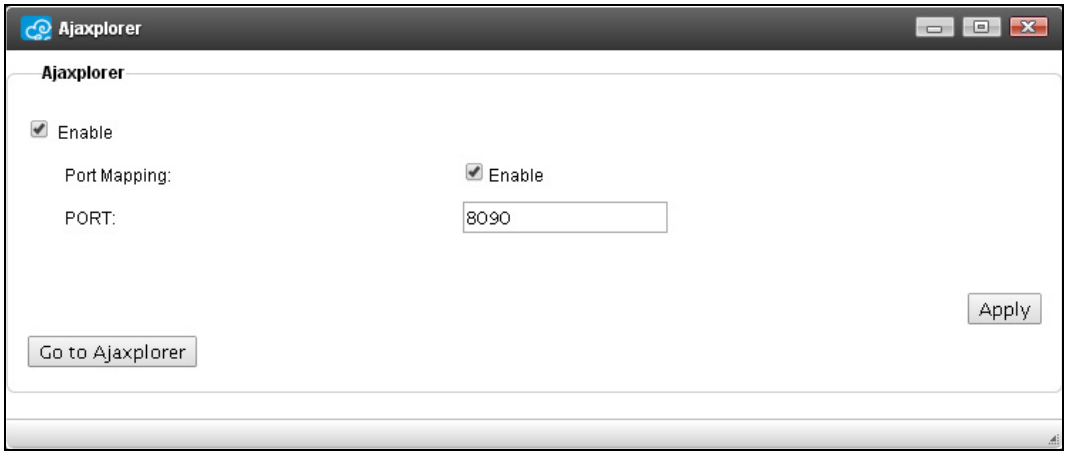


Figure 2-23

2. Click **Go to Ajaxplorer**. The Connect to Ajaxplorer page appears.

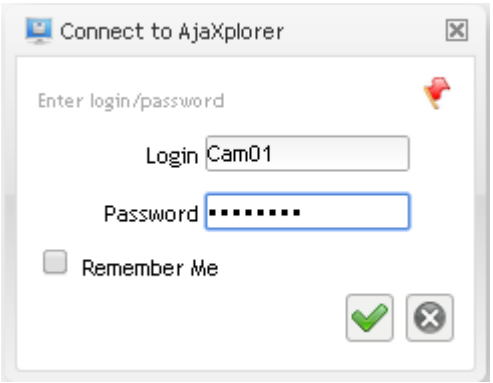


Figure 2-24

3. Type the username and password which allows access to the recordings you wish to play back. The Ajaxplorer window appears.

Note: By default, the administrator and default user accounts all have access to the default storage folder, the "IP_Camera" folder. For default username and password settings, see *Appendix A – Default Settings*.

---

4. Locate and click the file you wish to play back and then:
   - select **Open** to play back using the default player of your operating system or
   - select **Save** to save the file to the defined path for later playback

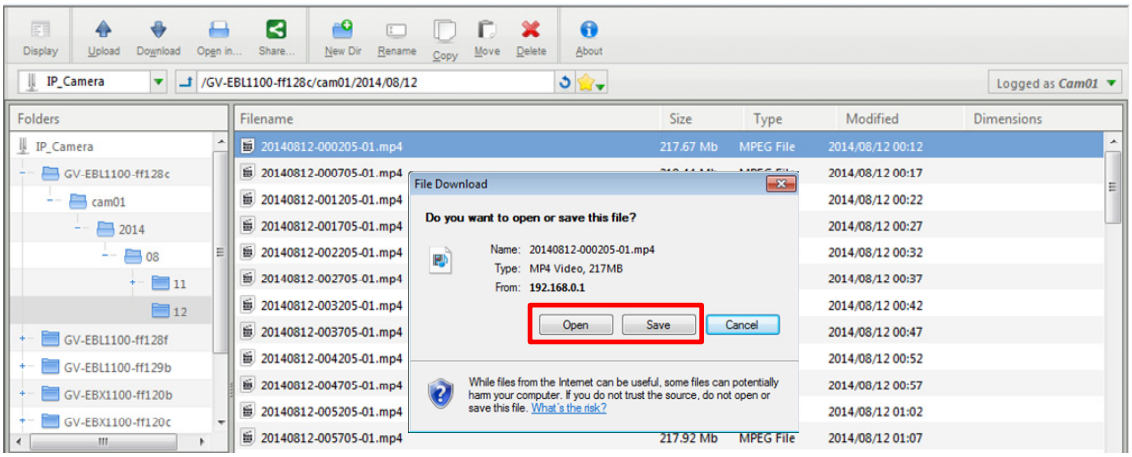


Figure 2-25

Tip: You can search files using key words. From the left-corner of the Ajaxplorer window, type the key words and click Search. For example, use the date to help you narrow down the search:

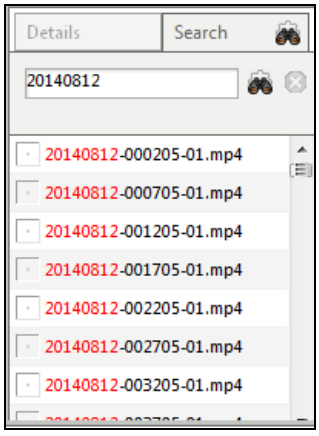


Figure 2-26

2.8.2 Playing Back on a Mobile Device

You can play back recordings saved at GV-NAS on your Android and iOS mobile devices using the GV-Eye application program. You can download the program from the **App Store** or **Android Market**. The following is an example using an iOS device.

1. Download GV-Eye from the **App Store** and install the application. The GV-Eye icon appears on your desktop.

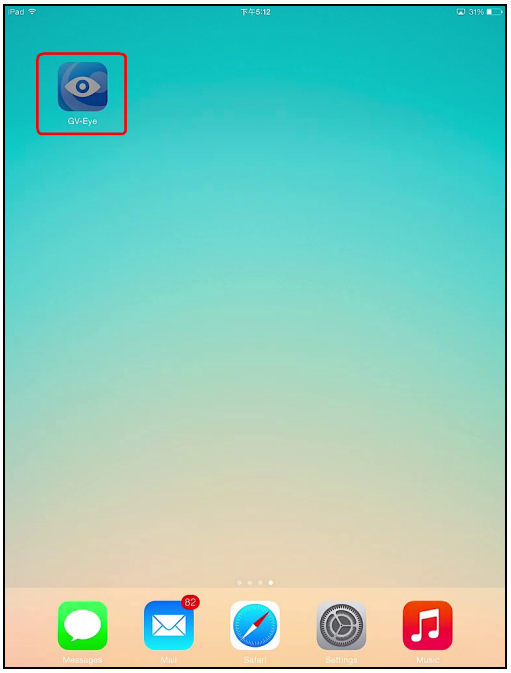


Figure 2-27

2. Tap the **GV-Eye** icon . This page appears.

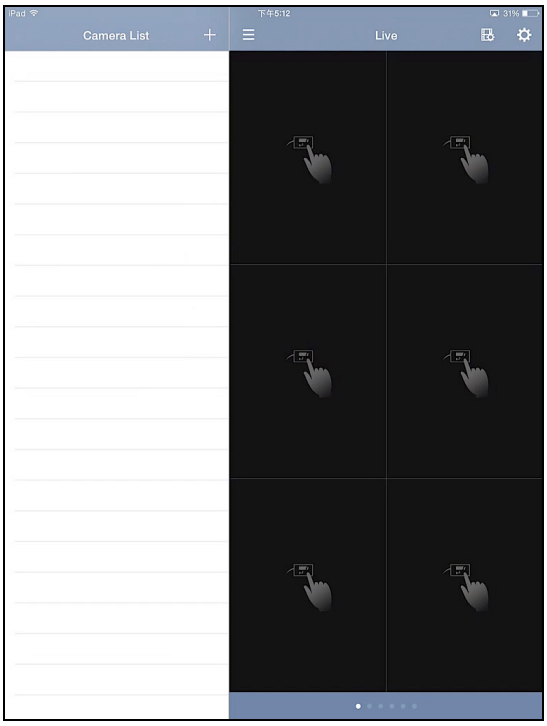


Figure 2-28

3. Tap the **Add** icon . This page appears.

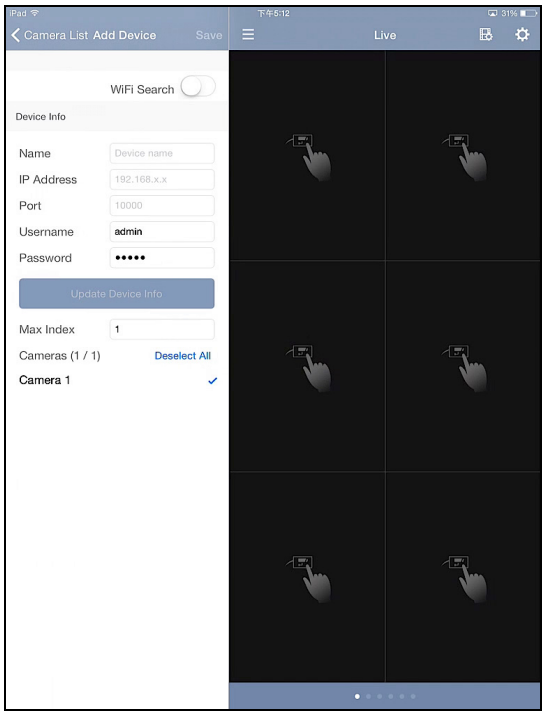


Figure 2-29

4. You can add cameras automatically or manually.

A. To add cameras automatically, tap the **WiFi Search** button to browse cameras under the same LAN, tap to select cameras and click **Save**. This camera is added to the Camera List.

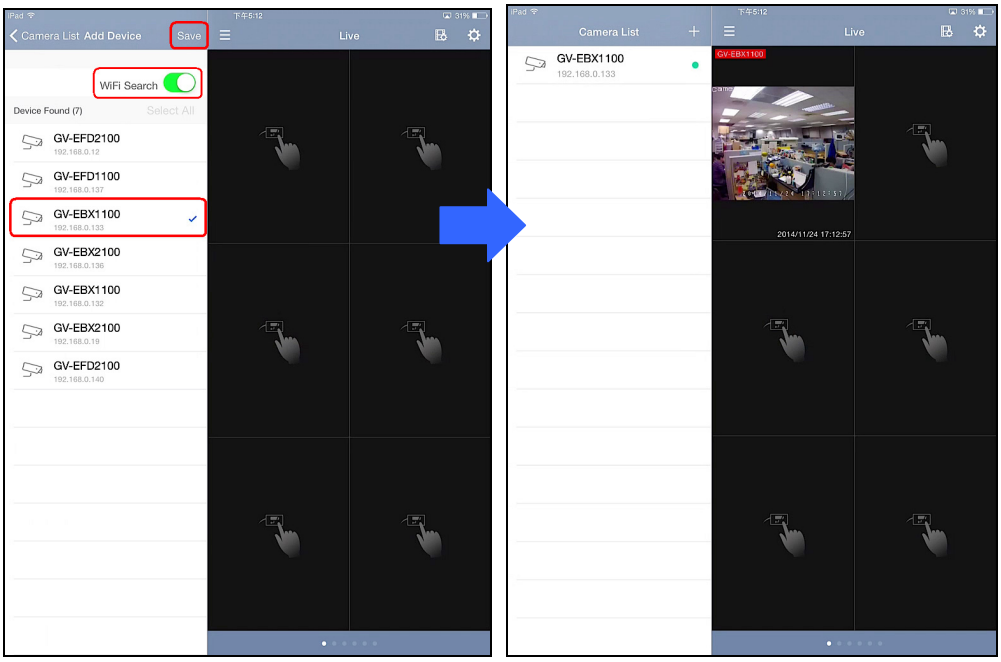


Figure 2-30

B. To add cameras manually, type the Name, IP Address, port, username and password of the camera and then click **Save**. This camera is added to the Camera List.

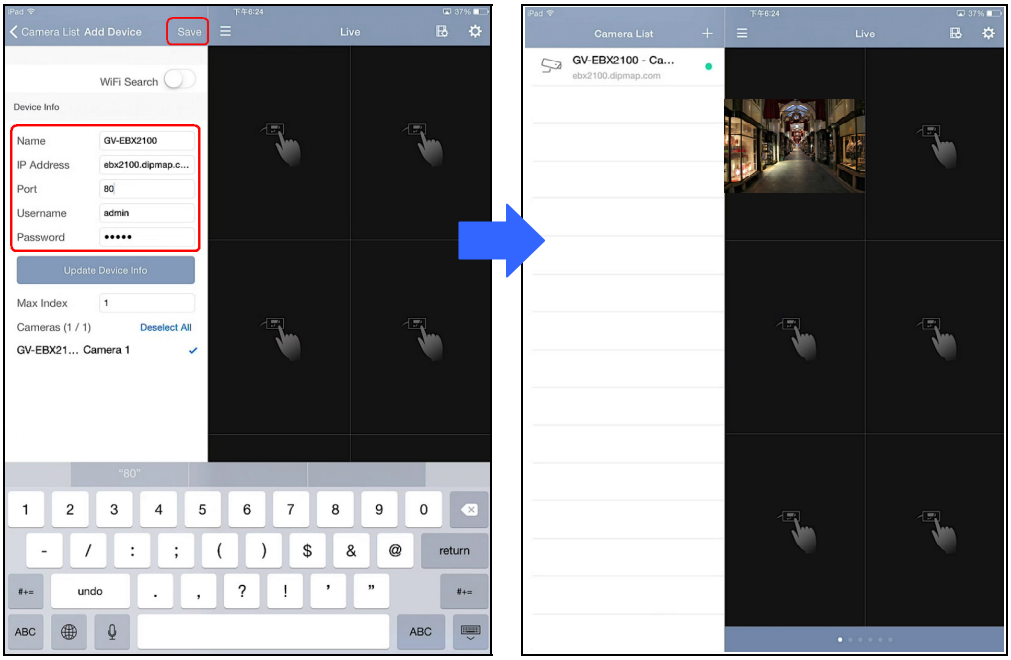


Figure 2-31

5. Tap the live view to show a full-screen display and tap the **Playback** icon on the bottom right corner. A list of recordings appears. They are arranged from new to old.

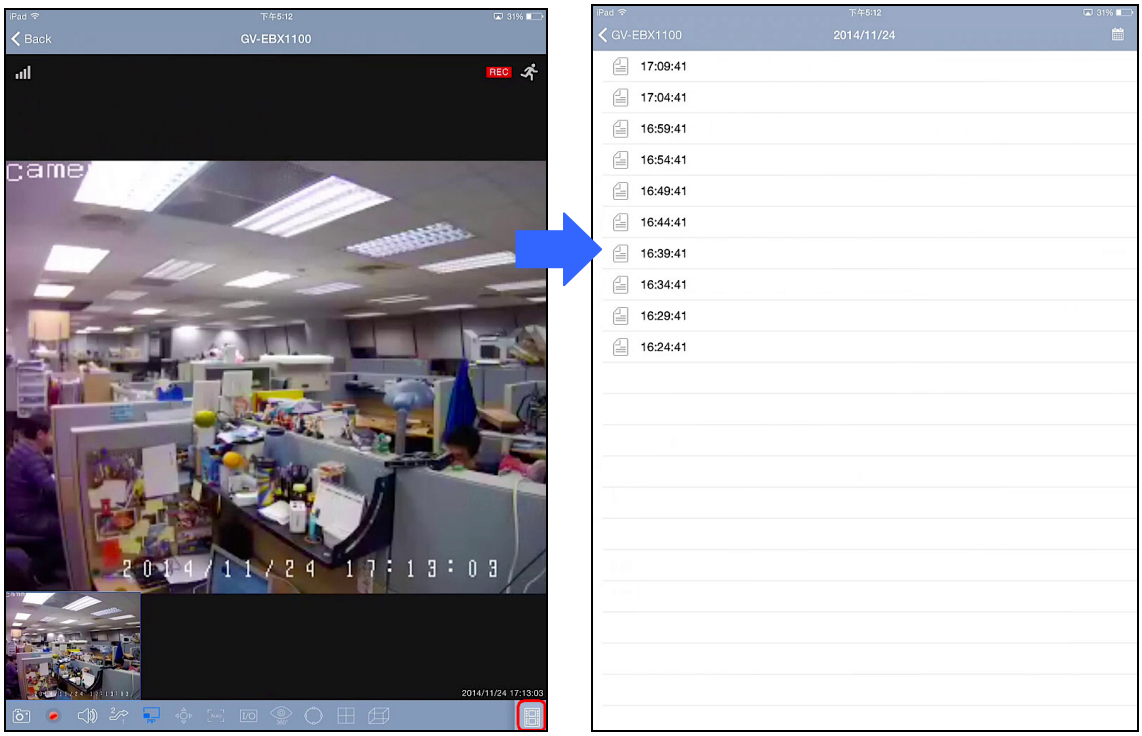


Figure 2-32

6. Tap an entry and the recording is immediately played back.

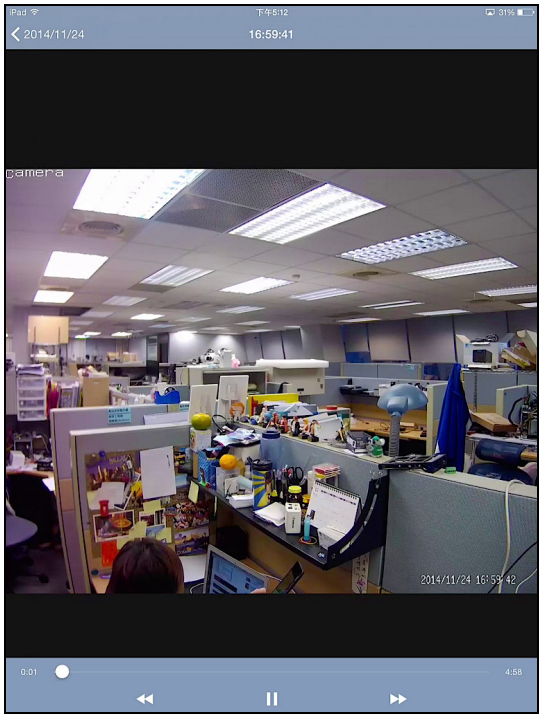


Figure 2-33

Chapter 3 System Administration

3.1 Basic Settings

3.1.1 System

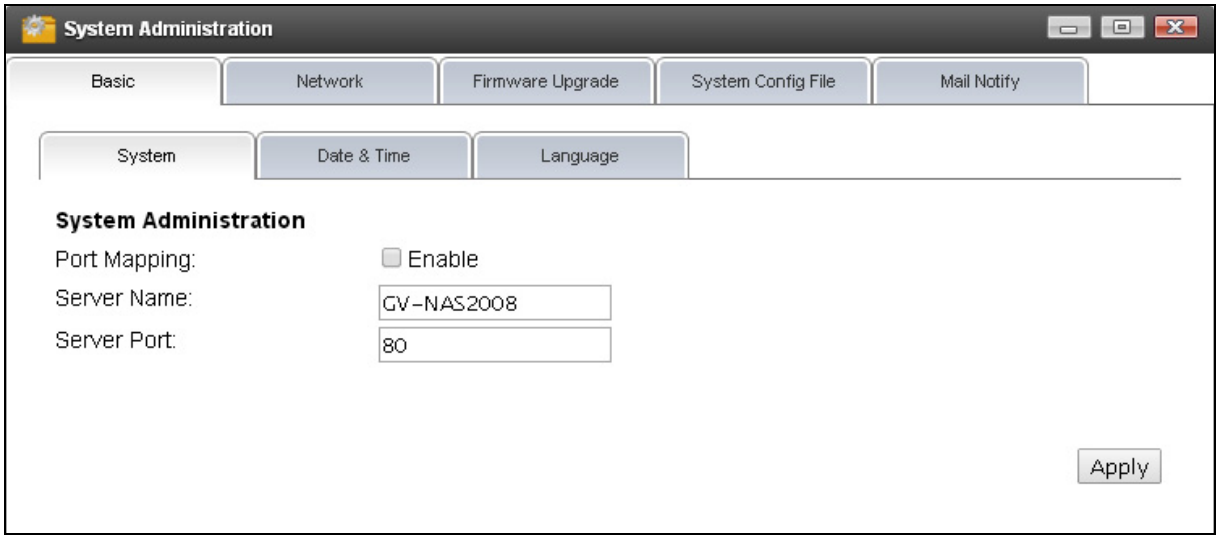


Figure 3-1

- **Port Mapping:** Allows GV-NAS System's setup port on the connected router to be automatically configured. This function is only supported when the router supports UPnP.
- **Server Name:** Defines the name for the GV-NAS System. Type the preferred server name in the blank to configure. You can access the system's storage by typing **\\Server Name\Folder Name**. The default server name is the model number.

3.1.2 Date & Time

Specify your time zone, date format and synchronization mode (manual or automatic) with the Internet time server.

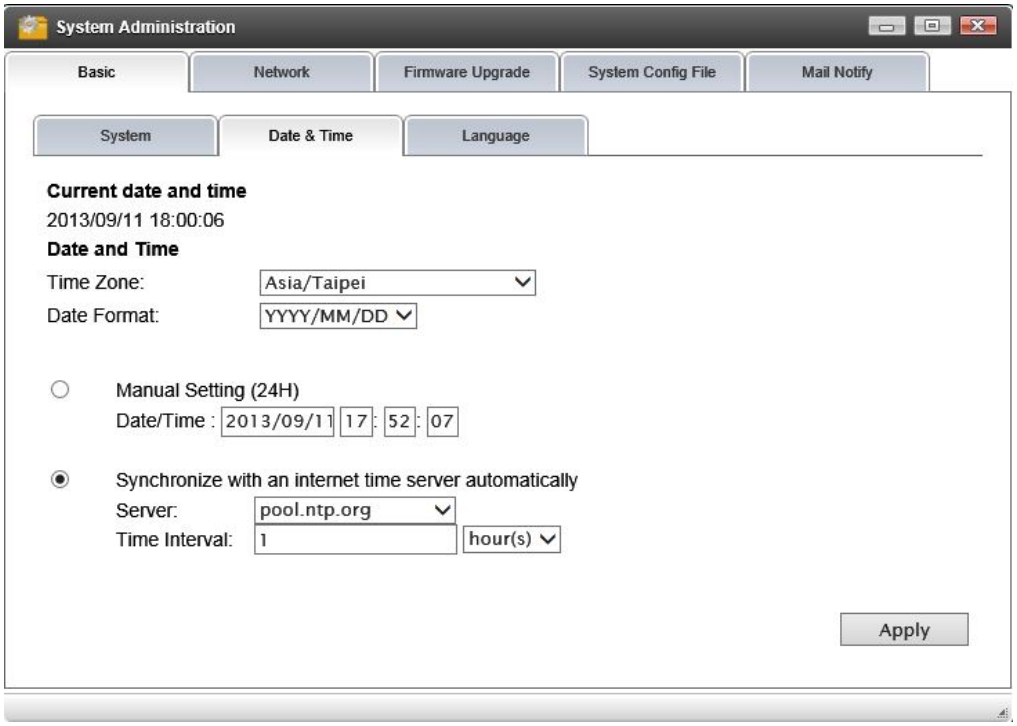


Figure 3-2

3.1.3 Language

The GV-NAS System supports 9 languages (see Specifications for details). You can change the display language here. By default, the display language is **Auto**, with which the system will automatically adopt the language used for your computer.

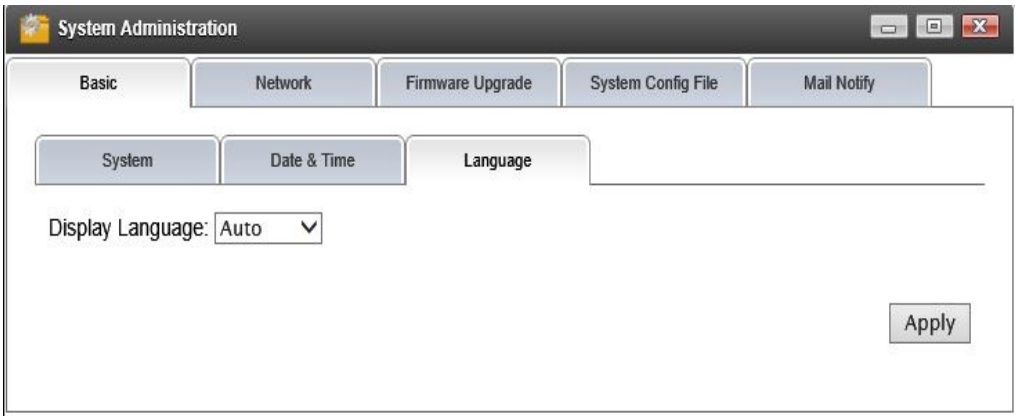


Figure 3-3

3.2 Network

You can configure the TCP/IP and DDNS settings. For details, refer to *2.6 Network Settings* in this manual.

3.3 Firmware Upgrade

You can find out the system's current firmware version and upgrade system firmware on this page. To upgrade the system firmware, download the latest firmware file from the GeoVision Website http://www.geovision.com.tw/english/5_3.asp, click **Choose File** to browse the file and then click **Upgrade**. This will take about 8 minutes. The system will reboot itself when the upgrade is completed.

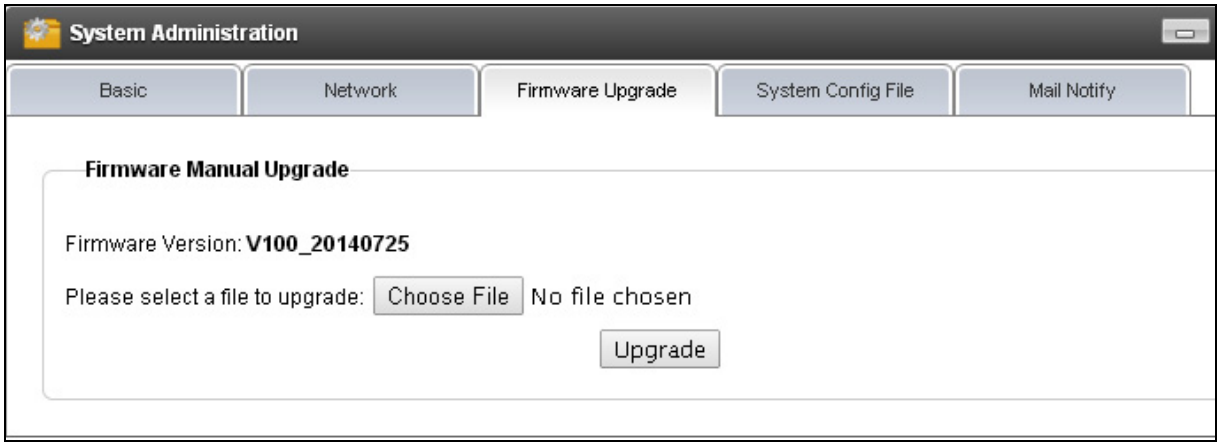


Figure 3-4

IMPORTANT: Make sure the power supply is stable during the upgrade. Power failure during a firmware update may cause permanent damage to the system, rendering the device unusable.

3.4 System Config File

You can export and import the system's network and user account settings for backup or system migration purposes.

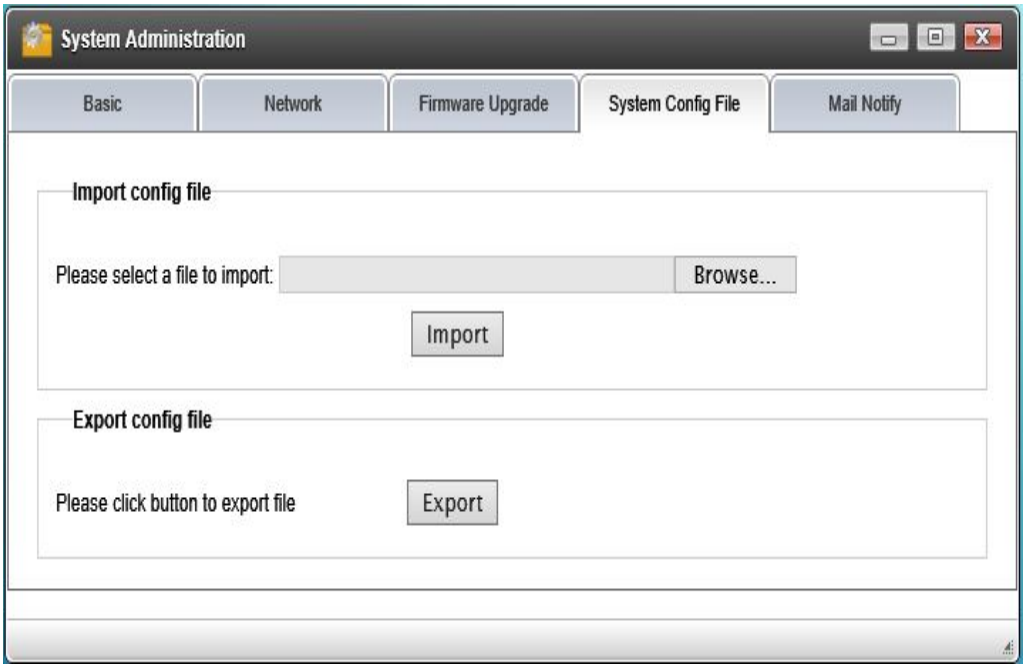


Figure 3-5

3.5 Mail Notification

GV-NAS System sends an e-mail to notify designated recipient(s) when a critical system error occurs, such as disk failure, disk removal, system overheat and full disk storage (when there is less than 5% of the storage space left).

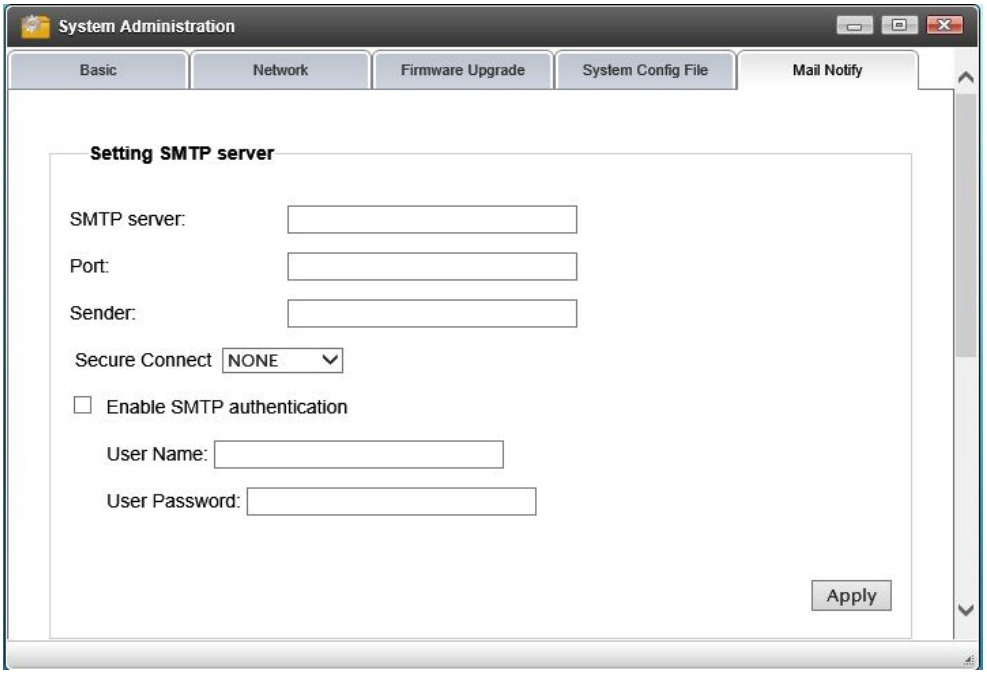


Figure 3-6

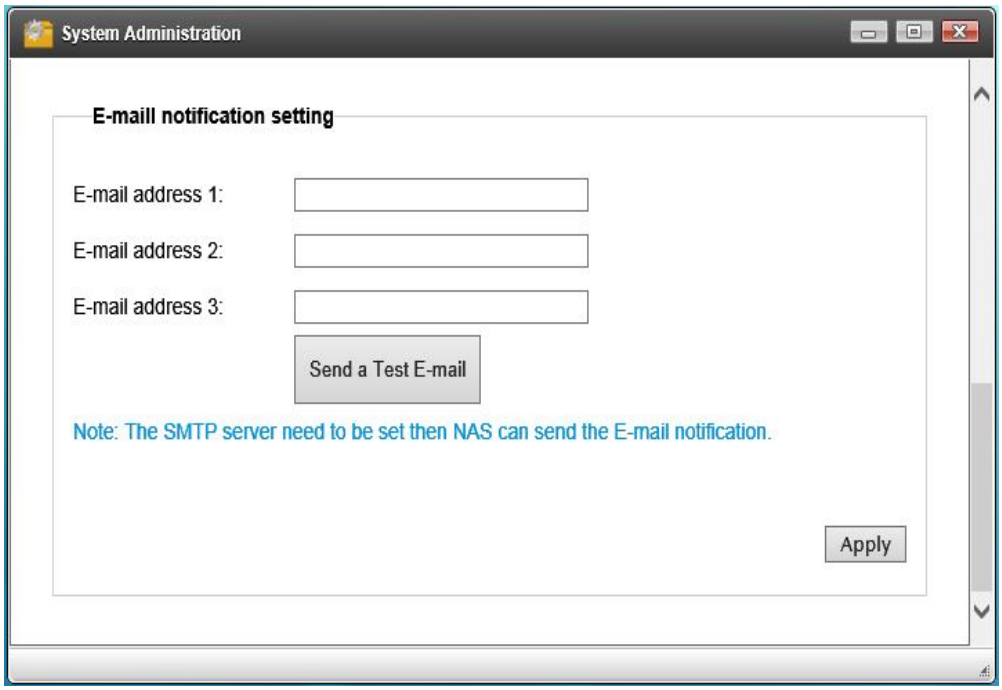


Figure 3-7

Chatper 4 Management Applications

4.1 Disk & RAID Management

4.1.1 Disk & Volume

Please refer to *2.4 Creating RAID* in this manual.

4.1.2 Disk Info

This page shows detailed information about the drive(s).

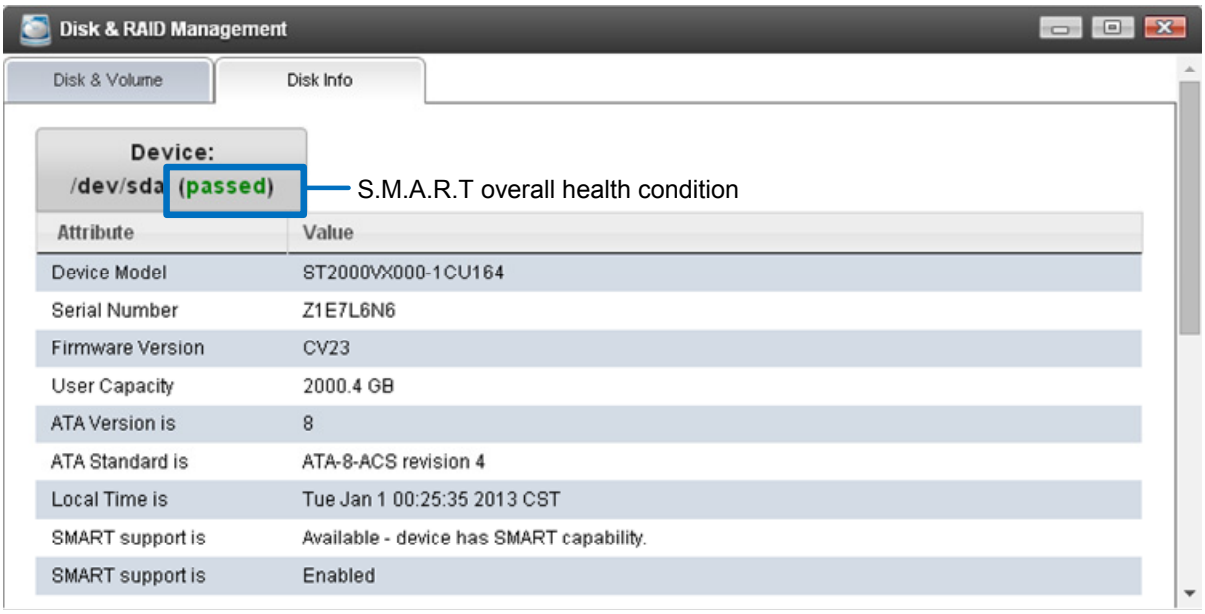


Figure 4-1

4.2 Access Rights Management

By default, there are three types of accounts: the administrator, web master and camera user accounts.

Default ID	Default Password	Purppose
admin	admin	For GV-NAS system management and configuration of all user accounts
webmaster	webmaster	For Web Server management
“Cam01”, “Cam02”… up to “Cam16”	12345678	For accessing the home folder through FTP and Ajaxplorer

Note:

1. By default, GV-NAS2008/4008 contains 8 camera folders (“Cam01” to “Cam08”) and GV-NAS2016/4016 contains 16 camera folders (“Cam01” to “Cam16”).
2. The webmaster account is only created after you enable the Web Server function. For details, see *4.7 Web Server*.

4.2.1 Users

The Users page allows the administrator to add/delete user accounts and customize its storage limit.

1. Click **Create User**. This page appears.

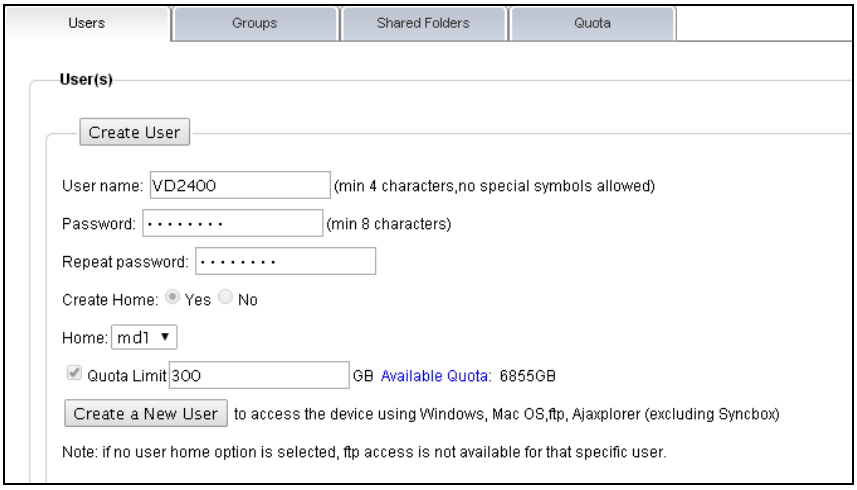


Figure 4-2

2. Type a username and password.
3. To create a private folder for this user, select **Yes** for Create Home.
4. From the Home drop-down list, select the volume where the private folder will be created.
5. To change the storage limit for this user, specify the number (in GB) next to Quota Limit. For details on default storage limit (quota), see *4.2.4 Quota*.

6. Click **Create a New User** to save the settings. This user is created.

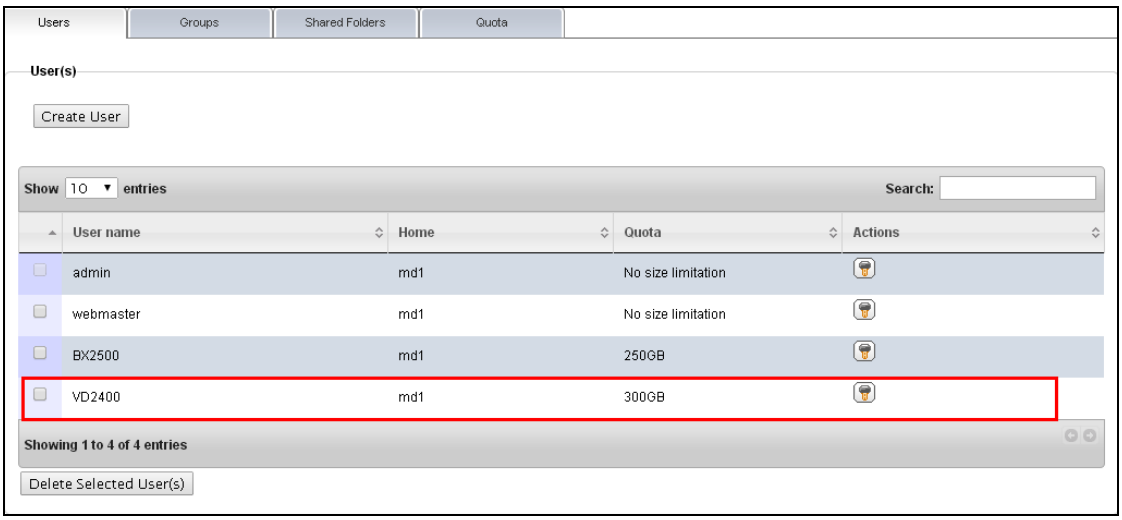


Figure 4-3

Note: The private folder is provided by the GV-NAS System's FTP service. To access the created private folder, open a browser, type **ftp://GV-NAS System's IP address** and type the specific username and password to log in. For details, see *4.3 Network Services*.

4.2.2 Group

This function is used to group users to which you intend to grant the same access rights. Once a group is established, you can configure the access rights of its users collectively. For more details, see *4.2.3 Shared Folder*. Follow the steps below to configure a group.

1. On the Groups page, click **Create Group**. This page appears.

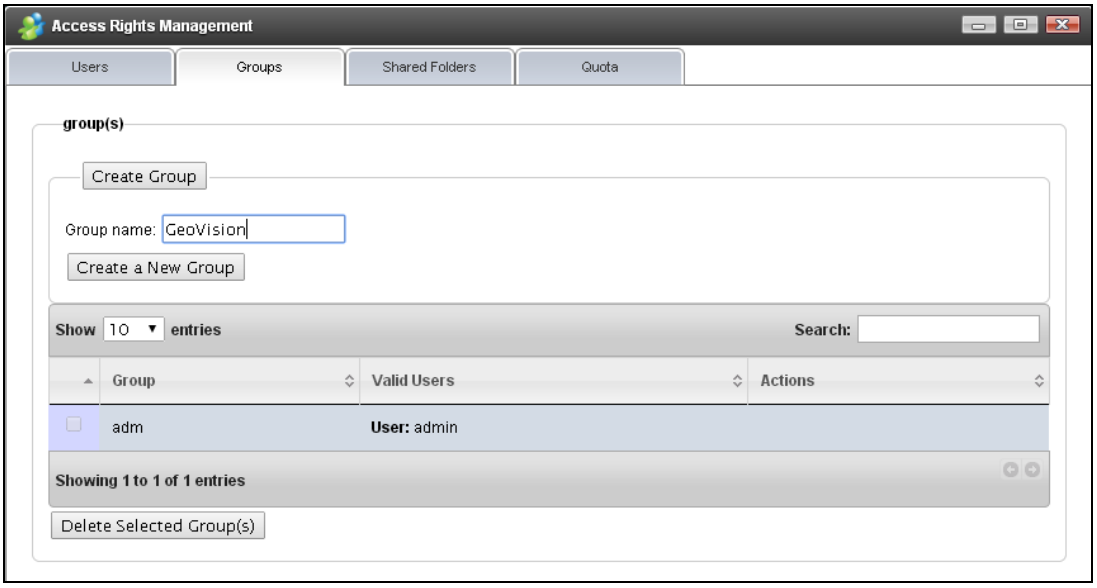


Figure 4-4

2. Type the group name and click **Create a New Group**. The new group is added.

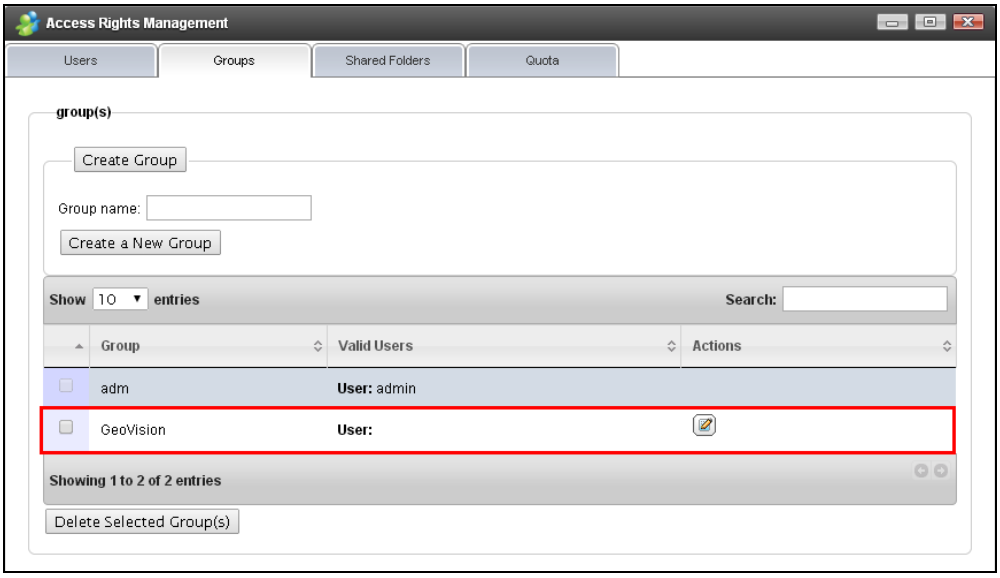


Figure 4-5

3. Assign users to the group.

   A. Click the **Change Group Properties** icon . This dialog box appears.

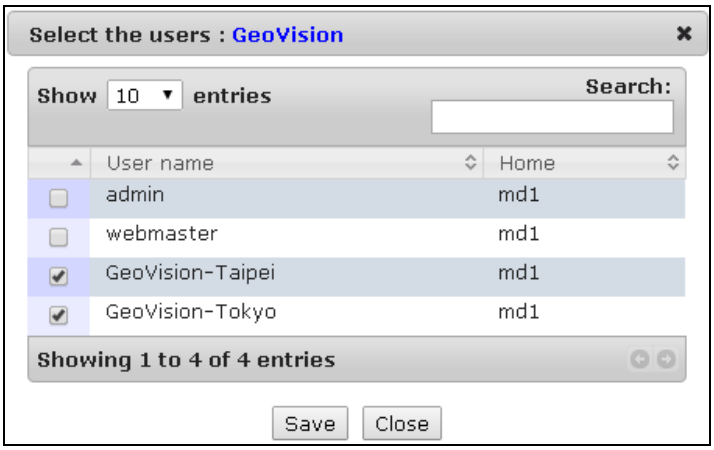


Figure 4-6

   B. Select the users to assign to the group and click **Save**. The selected users are immediately assigned.

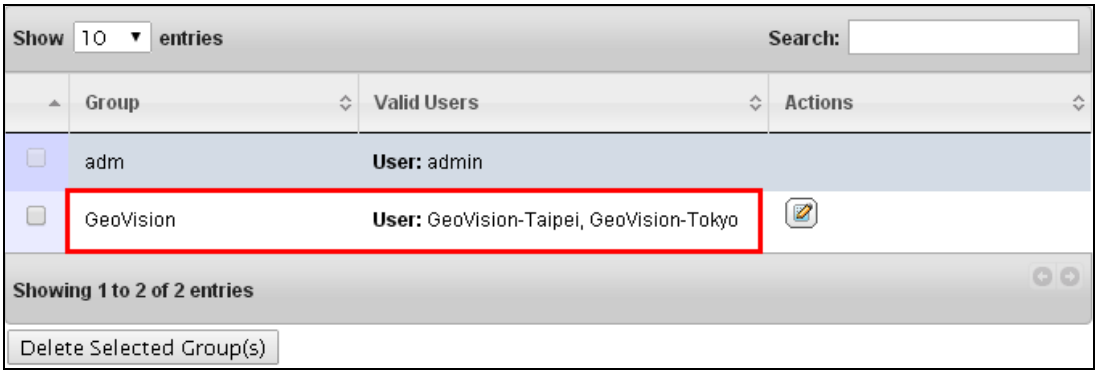


Figure 4-7

4. To delete an established group, select the group and click **Delete Selected Group(s)**.

4.2.3 Shared Folder

You can create a shared folder which allows read and write access for multiple users. Follow the steps below to create a shared folder and configure the user/group access rights.

1. On the Shared Folders page, click **Create a Shared Folder**. This page appears.

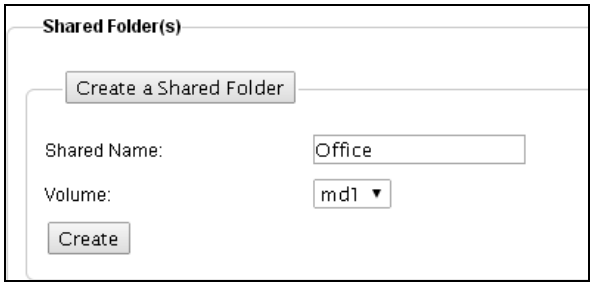


Figure 4-8

2. Type a folder name, select the volume and click **Create**. The Select Permissions page appears.
3. Click to define the access rights for each user or group. In this example, the “admin” and “rick_admin” groups are allowed to record to and play back files from the Office folder.

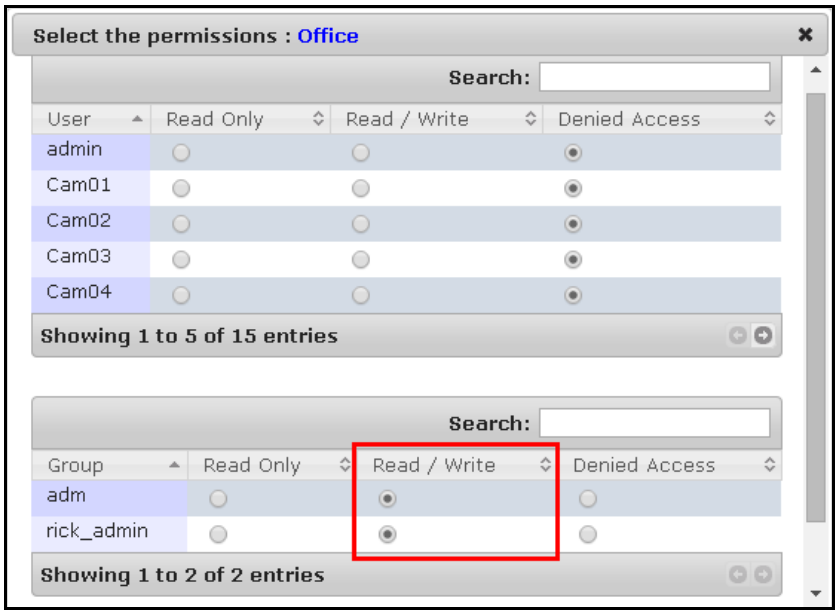


Figure 4-9

Note: If a user has been included in a group, the access permissions set for the group takes priority over its (individual) user setting.

4. Click **Save**. The folder is created and access rights are indicated in the table.

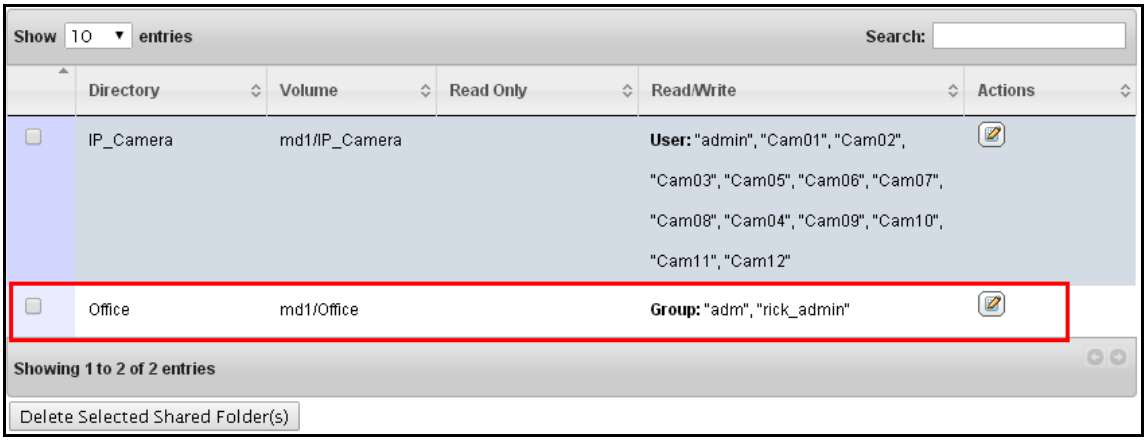


Figure 4-10

4.2.4 Quota

This page is used to configure a common storage limit (quota limit) for all users. When an account's total amount of data has reached the specified limit, disregarding which folders that they are stored, the user will not be able to upload more data to the GV-NAS System.

The default storage limits are detailed as follows:

Account Type	Default Storage Limit
administrator	10 GB
Cam01 to Cam08 or Cam16	50 GB
Note: When the total disk volume is 400 GB (for 2-bay GV-NAS System) / 800 GB (for 4-bay GV-NAS System) or lower, the default storage limit for each camera user (Cam01 to Cam16) will be (total disk volume – 10 GB for administrator) divided by the number of connected cameras.	

To customize the storage limit, select **Enable Quota**, type the storage limit in the blank and click **Apply**. You can also set up a different storage limit for each user on the User's page. For details, see the Quota Limit setting in step 5, *4.2.1 Users*.

Figure 4-11

4.3 Network Services

The GV-NAS System supports the FTP and AFP. By default, GV-NAS System can be used as an FTP server that allows file access (download and upload) using FTP client software.

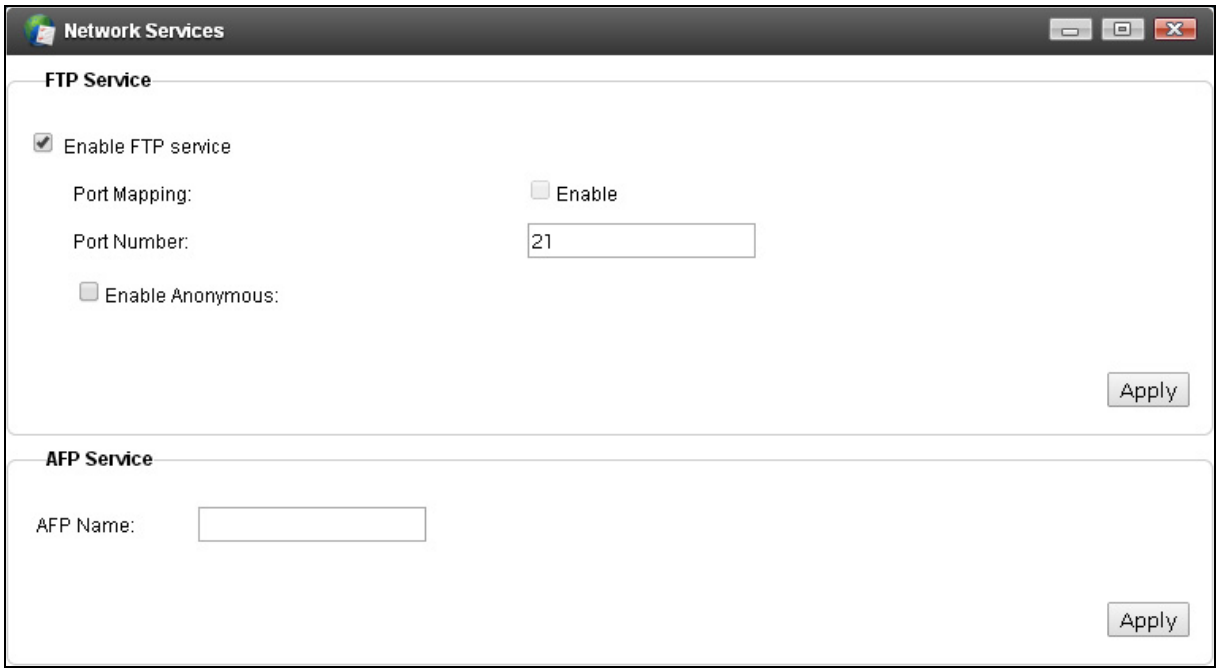


Figure 4-12

[FTP Service]

To access the GV-NAS System using FTP:

1. The user must have created a private folder. To create a private folder, see step 3 in *4.2.1 Users*.
2. Select **Enable FTP service** and configure the following.
   - **Port Mapping:** Allows the GV-NAS System's setup port to be automatically configured on the connected router that supports UPnP.

- **Enable Anonymous:** Allows client access to a chosen public or shared folder without a username and password.

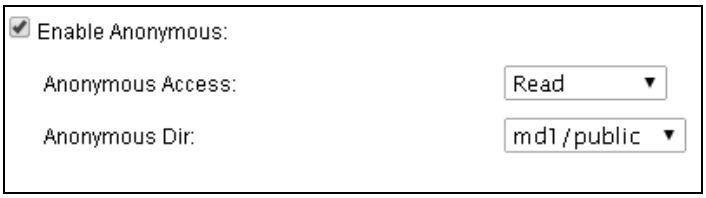


Figure 4-13

3. Open a browser and type **ftp://GV-NAS System's IP address**.
4. Enter an authorized username and password to connect to the FTP server.

[AFP Service]

To enable the AFP service, specify a server name and click **Apply**.

4.4 Ajaxplorer

Ajaxplorer is a file sharing platform which allows users to download and upload files with any Web browser over the Internet. This function is enabled by default, with the port setting **8090**.

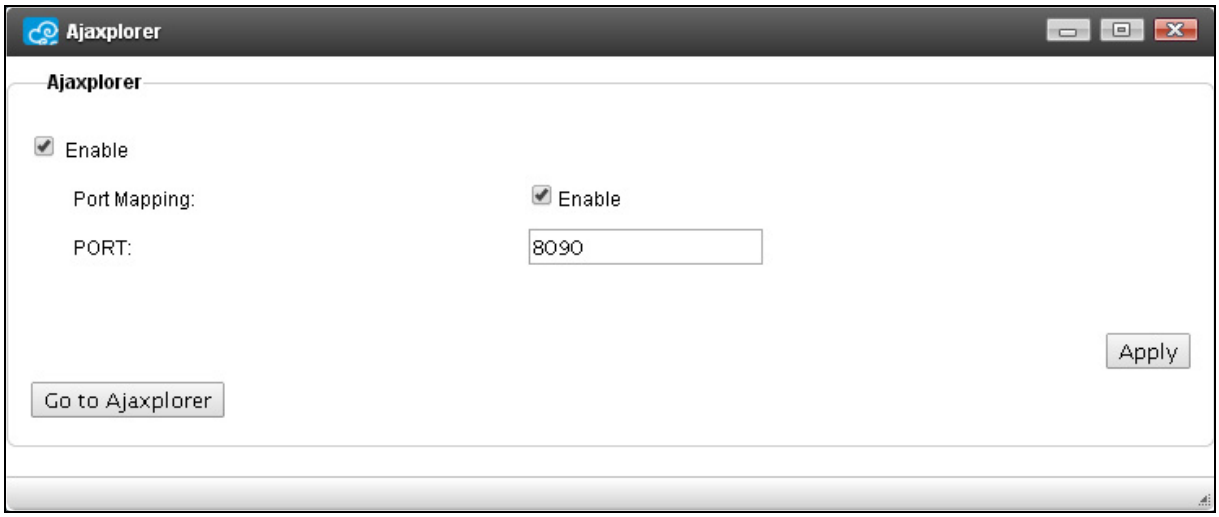


Figure 4-14

Select **Port Mapping** to automatically configure the port on your router with UPnP supported. If the GV-NAS System's IP address is http://192.168.5.3, then the GV-NAS System is accessible using http://192.168.5.3:8090 over the Internet or click **Go to Ajaxplorer** and type the username and password to access the folder through the Web interface. The files are listed from old to new.

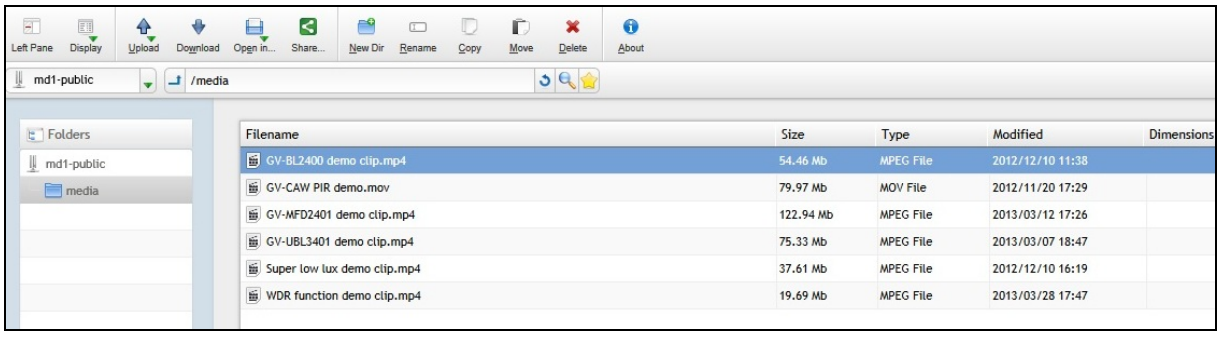


Figure 4-15

4.5 DLNA Media Server

The GV-NAS System can be used as a DLNA server from which you can stream the stored photos, music and videos to any network-connected home media player (like PS3, smart TV or a Windows Home Theatre PC) that also supports DLNA for playback.

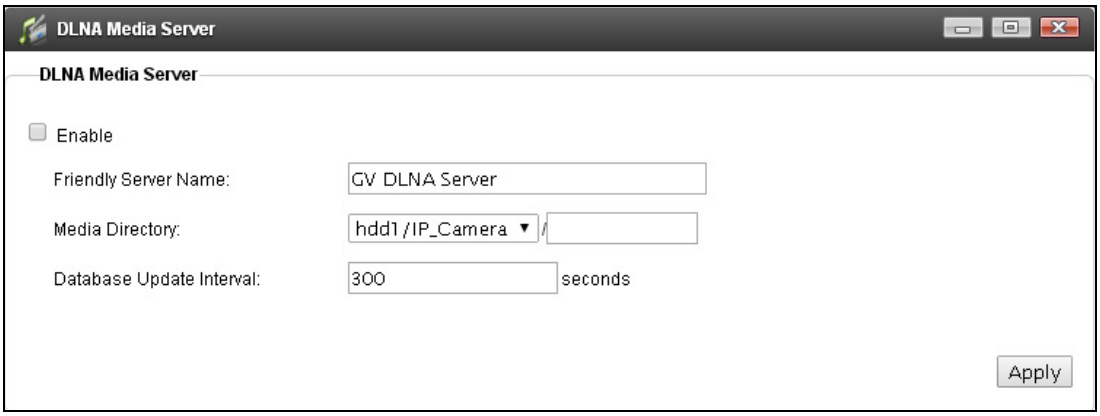


Figure 4-16

1. Make sure your home media player is connected to network and its DLNA service is also enabled.
2. Configure your GV-NAS System as a media server.
   A. Select **Enable**.
   B. Type a name for your GV-NAS System as a media server in **Friendly Server Name** field.
   C. Select the folder from the **Media Directory** field, which contains the files you intend to stream.
   D. Optionally change the time interval at which the selected folder is scanned to acquire the latest play list. System performance may be reduced if the interval is too short. The default is **300** seconds.
3. Click **Apply** to save the settings. Your GV-NAS System should now be accessible on your home media player.

Note:

1. By default, the Media Directory is set to the shared folder **hdd1/IP_Camera**, which contains all your camera recordings. When DLNA is enabled, all the camera recordings will be browsed and streamed which may highly affect the recording performance.
2. The media folder can only be created under a public or shared folder.

4.6 iTunes Media Server

This server is also capable of streaming media files from GV-NAS System to Apple iTunes on Windows or Mac OS. Select **Enable**, select a folder and click **Apply**.

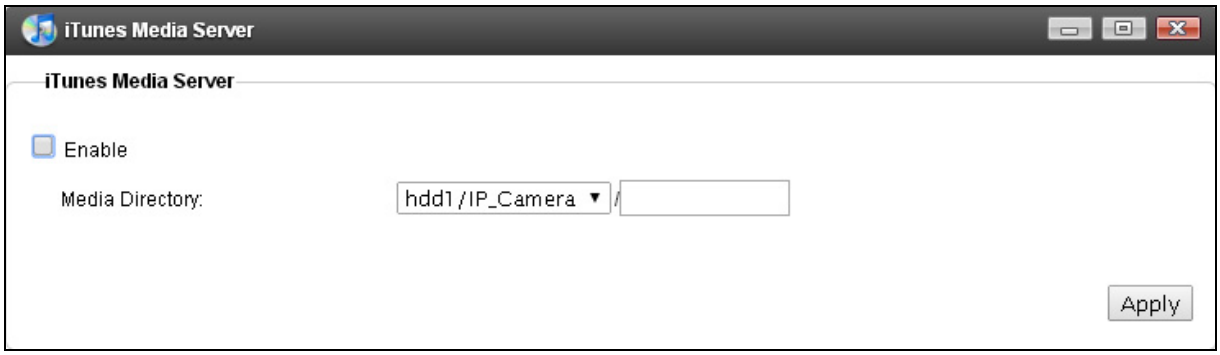


Figure 4-17

Note: By default, the Media Directory is set to the shared folder **hdd1/IP_Camera**, which contains all your camera recordings. When iTunes Media Server is enabled, all the camera recordings will be browsed and streamed which may highly affect the recording performance.

All the media files within the folder should automatically appear in iTunes under the “Shared” section.

Figure 4-18

4.7 Web Server

You can use GV-NAS System as a Web server and host a Web site. Follow the steps below:

1. Establish a Web site link.

Figure 4-19

A. Select **Enable WebServer**.

B. Select **Port Mapping** to automatically configure the corresponding port on the router which must also support UPnP.

C. Click **Apply**. The Web server should be enabled immediately. Click **Go to Web Server** to see if the function is successfully enabled.

Note: When you click **Apply** on the Web Server page, a user Webmaster is created under the Users page. To change the default password, see *4.2.1 Users*.

---

2. Edit the contents of the Web site using the Ajaxplorer.

A. Click the **Ajaxplorer** icon from the GV-NAS System desktop and click **Go to Ajaxplorer**.

Figure 4-20

B. Log in with the **Web server's** username and password. The default username and ID are both **webmaster**.

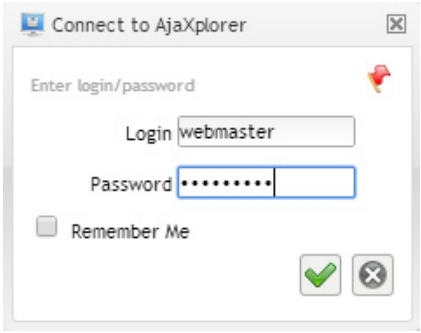


Figure 4-21

C. Select the **webmaster** folder from the drop-down list. You will find a sample file in the folder.

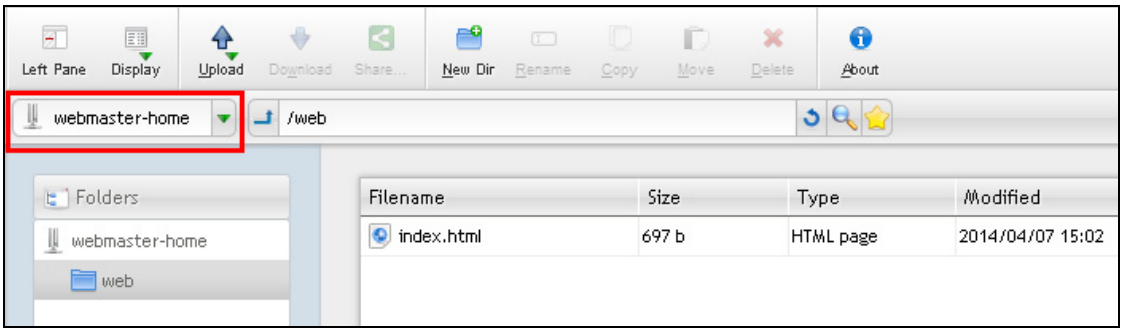


Figure 4-22

D. To upload files, click **Upload** from the toolbar and then select **From computer** or **From remote server**. The Upload dialog box appears.

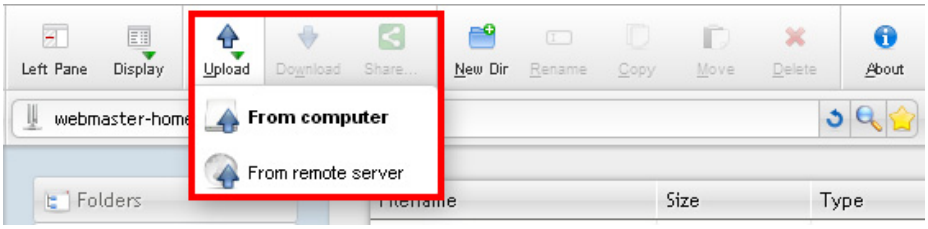


Figure 4-23

E. Click **Browse** to upload files to the GV-NAS System (Web server).

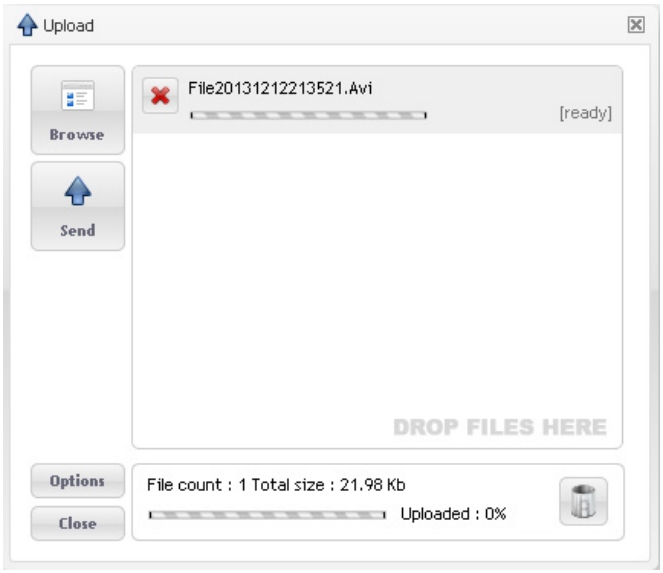


Figure 4-24

F. Click **Close** when files are uploaded.

3. The Web page is now accessible using the IP address of your GV-NAS System followed by the port number. For example, **http://192.168.25.1:8060**

4.8 Power Management

4.8.1 Power Service

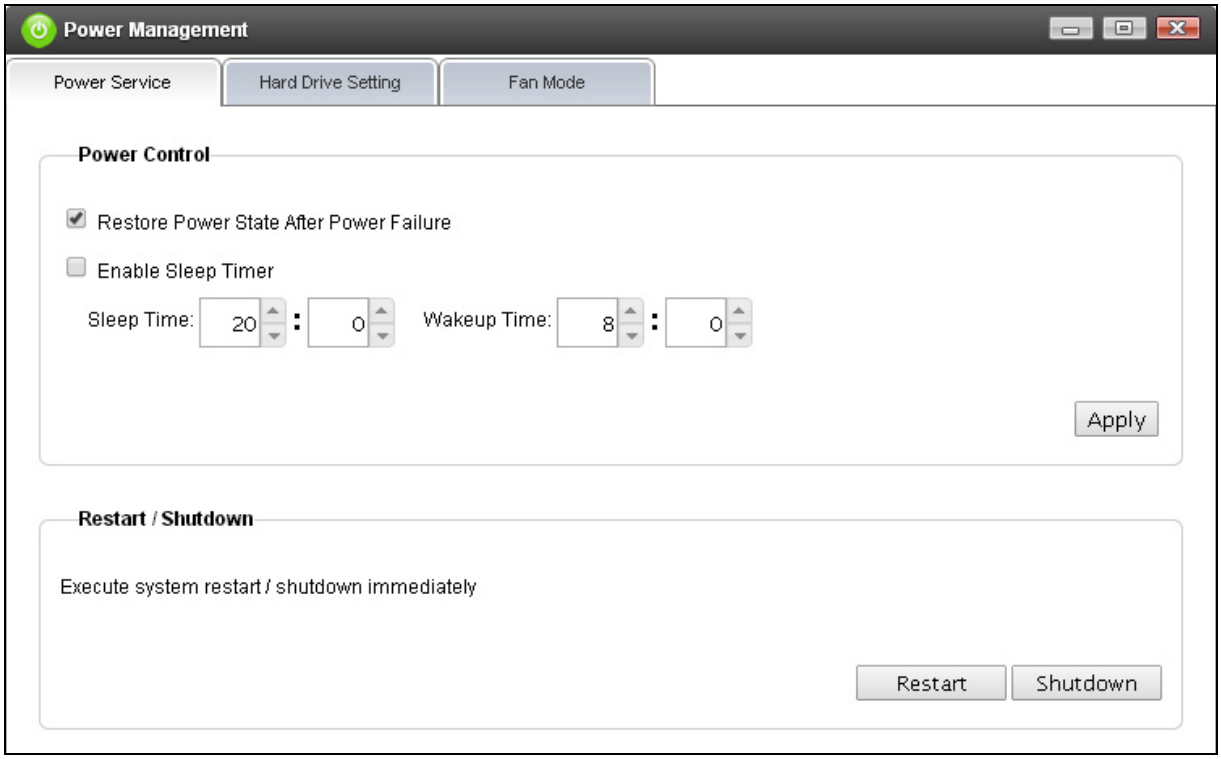


Figure 4-25

- **Restore Power State after Power Failure:** Select this function for the system to start up when power resumes after a power failure. This option is not available for GV-NAS2008/4008 which already supports manual activation of the same function on the rear panel. For details, see Figure 1-3.
- **Enable Sleep Timer:** Defines the sleep time and wakeup time for the system. To wake the system up during the sleep mode, short press the power button (No. 2, Figure 1-2).
- **Restart/Shutdown**: Click to restart or shut down the system.

4.8.2 Hard Drive Setting

This feature allows users to set the HDD idle spin down timer. This function is disabled by default.

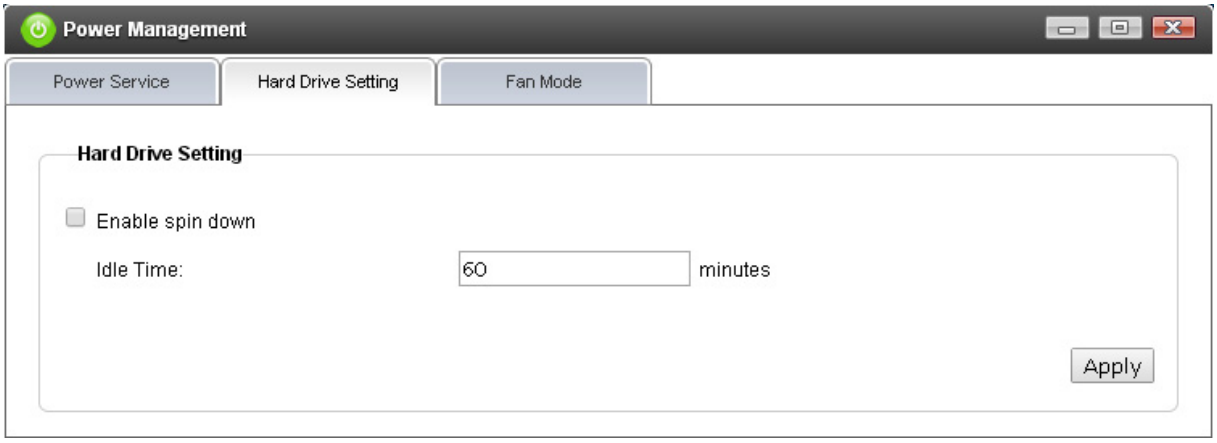


Figure 4-26

4.8.3 Fan Mode

To stop the fan completely, select **Fan Stop**. However, this function is only recommended when the system is operating in a well-ventilated or cool environment.

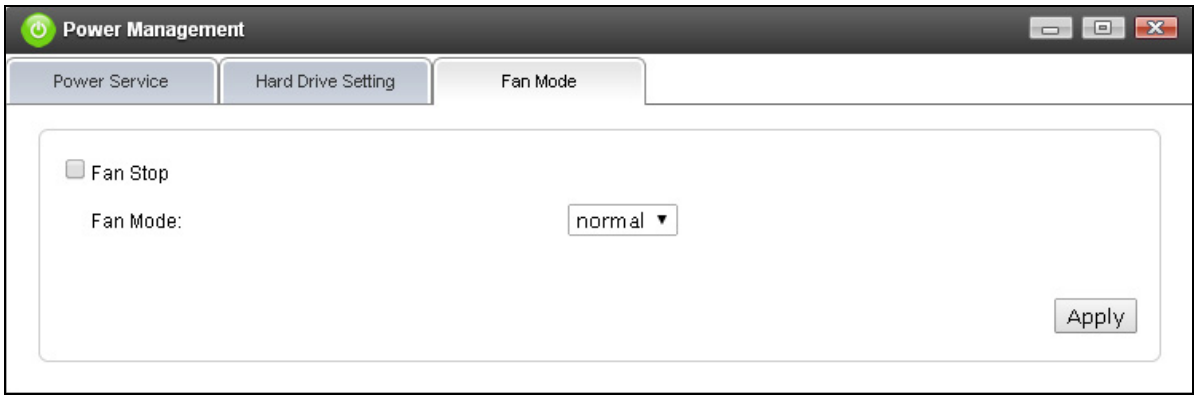


Figure 4-27

- **Normal Mode:** The fan turns on when the CPU reaches 40°C (104°F) and spins at its highest speed at 55°C (131°F).
- **Quiet Mode:** The fan spins at a lower speed compared to the normal mode to reduce noise. The fan turns on when the CPU reaches 65°C (149°F) and spins at its highest speed at 75°C (167°F).

4.9 External Device

This page shows the USB mass storage and printing devices connected to the GV-NAS System.

4.9.1 USB Disk

You can back up data to GV-NAS System through USB devices. Only mass-storage (e.g. USB flash drives) are shown here.

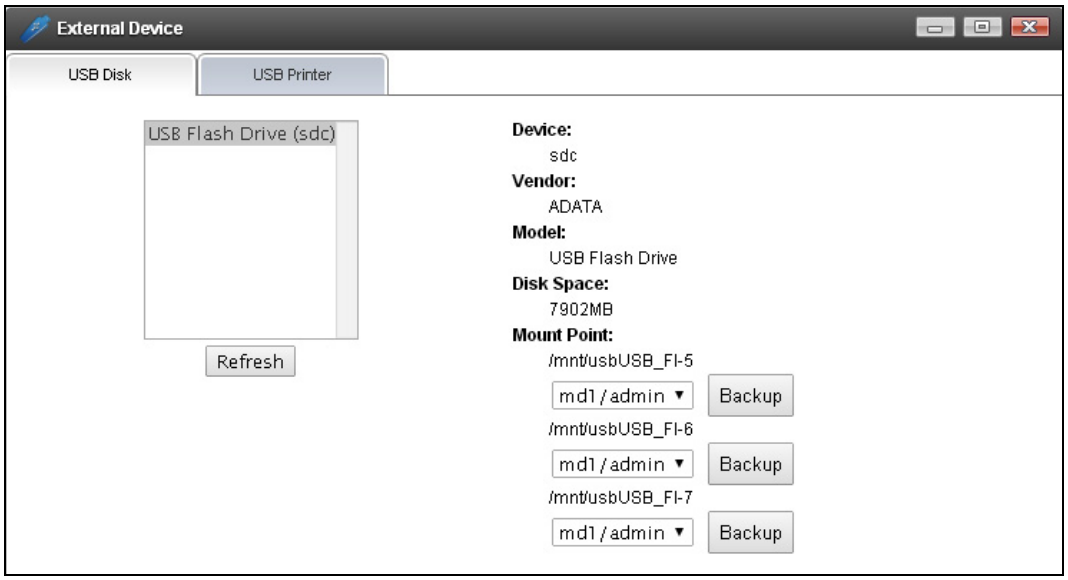


Figure 4-28

- **Refresh:** Click to refresh the list of attached USB drives.
- **Backup:** Select a USB device, select a folder using the drop-down list and the click **Backup**.

4.9.2 USB Printer

You can print the files saved at your GV-NAS System using a USB printer. Connect a USB printer to the GV-NAS System's USB port and the printer will be automatically scanned and its information displayed. The TCP port is 9100 to access the printer from the network.

Note: Only one USB printer is supported.

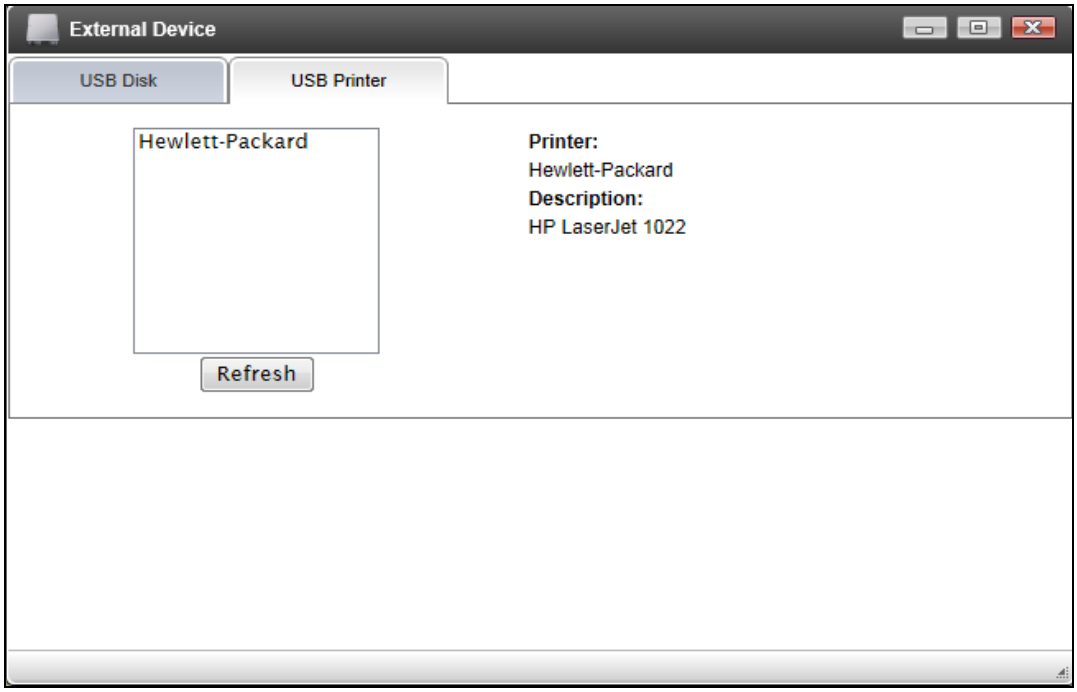


Figure 4-29

4.10 System Status

4.10.1 System Information

Information on CPU, memory, temperature and network speeds are detailed on this page.

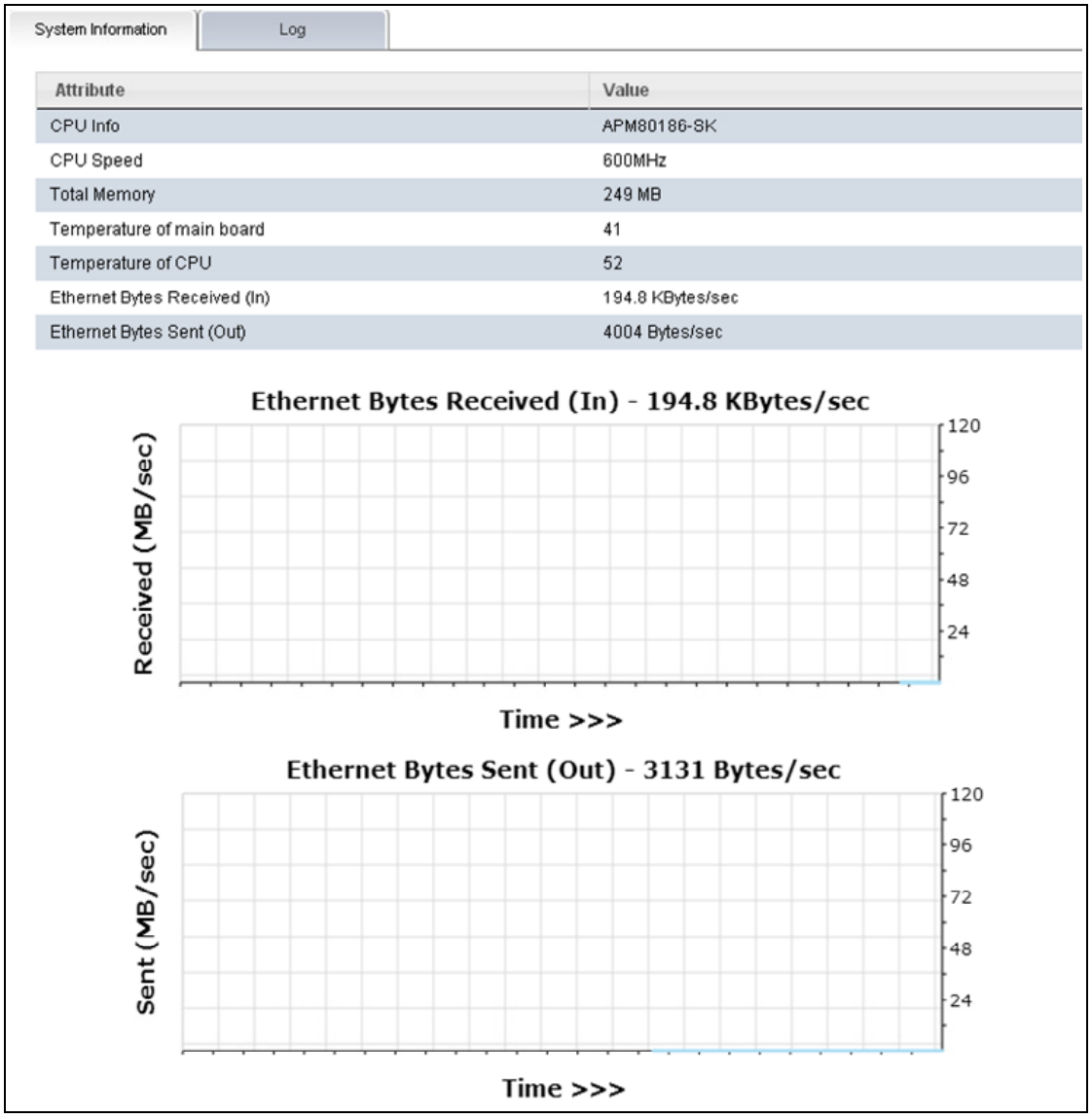


Figure 4-30

4.10.2 System Log

Use the log to help you find device records on kernel, system samba, FTP, AFP, Ajaxplorer and DDNS. To display records, select the record type using the drop-down list. Type key words in the Search box to help you locate the desired information.

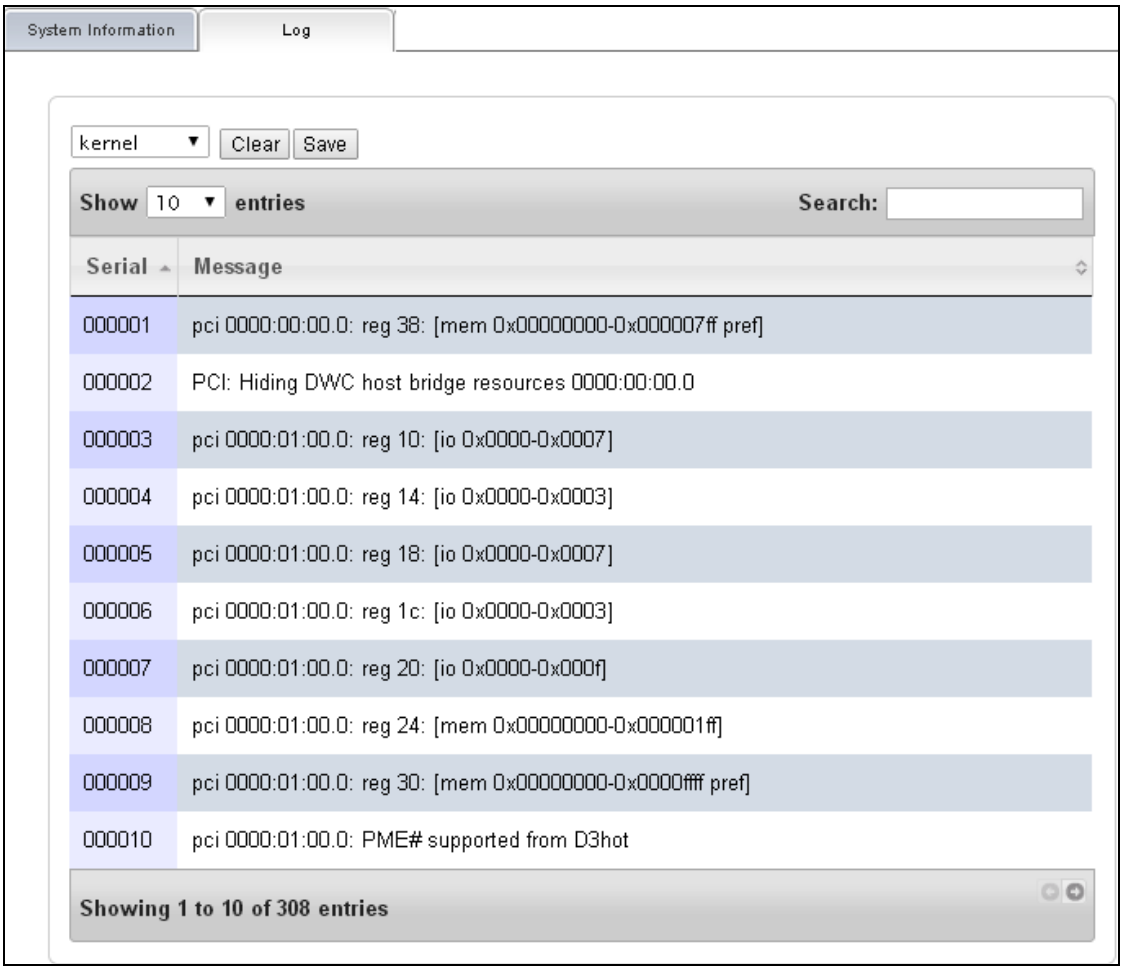


Figure 4-31

Specifications

Hardware

Models		GV-NAS2008	GV-NAS2016	GV-NAS4008	GV-NAS4016
System					
CPU		APM 600 MHz	PowerPC 1 GHz	APM 600 MHz	PowerPC 1 GHz
RAM		DDR II 256 MB	DDR II 512 MB	DDR II 256 MB	DDR II 512 MB
No. of Drive Bay		2 (3.5" HDD)		4 (3.5" HDD)	
Power		12V DC, 5A			
External Interface					
Gigabit Port (RJ-45, 10/100/1000 Mbps)		1	2	1	2
USB 2.0		1	4	1	4
LCD Display		Yes (IP address, port setting, MAC address, motherboard temperature and CPU temperature)			
Note: Although GV-NAS2016/4016 is equipped with 2 Gigabit ports, only one IP address is supported.					
Environment					
Operating Temperature		0 ~ 40°C (32 ~ 104°F)			
Humidity		0 ~ 80% RH (non-condensing)			
Physical					
Color		Black			
Dimensions (W x H x D)		14 x 12 x 22 cm (5.5 x 4.7 x 8.7")		17 x 17 x 23 cm (6.7 x 6.7 x 9.1")	
Weight		1.4 kg (3.1 lb)		3 kg (6.6 lb)	
Fan On	**Normal**	On 40°C (104°F); Speeds up 55°C (131°F)			
	Quiet	On 65°C (149°F); Speeds up 75°C (167°F)			

Software

Models	GV-NAS2008	GV-NAS2016	GV-NAS4008	GV-NAS4016
Connection with GV-IP Camera				
Max. No. of Channels from GV-IP Cameras	8	16	8	16
RAID Management				
RAID Mode	RAID 0/1 and JBOD			RAID 0/1/5 and JBOD
Automatic RAID Creation	Yes			
RAID Migration	No			Yes
RAID Expansion	No		Yes	
Note: 1. The maximum numbers of recording channels are based on 5 minute recording interval, default recording quality setting (Good) and a constant bitrate of 6 Mbit at maximum. 2. Automatic RAID creation refers to automatic creation of RAID array based on the number of inserted hard disks. 3. RAID migration refers to re-establishment of a RAID array to another RAID level by adding or removing hard disks. 4. RAID expansion refers to creation of more RAID array by adding one or more hard disks.				
Disks				
Hot Swapping	Yes			
Idle Spin-Down	Yes			
Disk Information	Yes			
S.M.A.R.T	Yes			

Models	GV-NAS2008	GV-NAS2016	GV-NAS4008	GV-NAS4016
User Settings				
User Authentication	Yes			
User Group	Yes			
User Storage Threshold (Quota)	Yes			
Shared Folders	Yes			
User Settings				
User Configuration Import & Export	Yes			
System Information and Control				
Transfer Rates (Bps)	Yes			
System Log	Yes			
E-Mail Notification	Yes			
Fan Control	Yes (suspension, normal mode and quiet mode)			
Multimedia				
iTunes Media Server	Yes			
DLNA Media Server	Yes			
Power Management				
Automatic Startup at Power Resumption	No	Yes	No	Yes
Scheduled Sleep/Wakeup	Yes			
Remote Restart / Shutdown	Yes			
Note: GV-NAS2008/4008 supports automatic system startup (at power resumption) using a hardware DIP switch. For details, see *Power Mode* (No. 2, Figure 1-3).				

Models	GV-NAS2008	GV-NAS2016	GV-NAS4008	GV-NAS4016
Network				
Connection Type	Fixed IP address, Dynamic IP address			
Protocols	AFP, DDNS, FTP, HTTP, NFS, NTP, CIFS/SMB, UPnP			
Maintenance				
Firmware Upgrade	Yes			
Others				
Web Browser	• Internet Explorer 8 or later • Google Chrome 33.0.1750.154 • Mozilla Firefox 28 • Safari for MAC 6.0.5			
Web Server	Yes			
Smart Device Access for playback	GV-Eye (iOS, Android)			
Regulatory	CE, FCC			
Language	English / French / German / Japanese / Portuguese / Russian / Simplified Chinese / Spanish / Traditional Chinese			

All specifications are subject to change without prior notice.

Appendix A – Default Settings

The default settings for GV-NAS are detailed in this table.

Category		Field	Default Setting
Basic	System	Server Name	GV-NAS2008
		Server Port	80
Network	TCP/IP	IP Address	DHCP (for routers that support DHCP), 192.168.0.200 (for routers that do not support DHCP)
Network Services	FTP Service	Status	Disabled
		Port	21
		Enable Anonymous	Disabled
AjaXplorer		Status	Enabled
		Port	8090
DLNA Media Server		Status	Disabled
		Server Name	GV-NAS2008 DLNA Server
		Media Directory	IP_Camera
		Update Interval	300 seconds
iTunes Media Player		Status	Disabled
		Media Directory	IP_Camera
Web Server		Status	Disabled
		Port	8060
Power Management	Power service	Sleep Timer	Disabled
	Hard Drive Setting	Spin Down	Disabled
		Idle Time	60 minutes
	Fan Mode	Fan stop	Disabled
		Fan Mode	Normal

Account Types	Field	Default Setting
Administrator	ID (Username)	admin
	Password	admin
User	ID (Username)	“Cam01”, “Cam02”…up to “Cam16”
	Password	12345678
Webmaster	ID (Username)	webmaster
	Password	webmaster

Note:

1. By default, GV-NAS2008/4008 contains 8 user accounts and GV-NAS2016/4016 contains 16 user accounts.
2. The webmaster account is only created after you enable the Web Server function. For details, see *4.7 Web Server*.