D-Link®

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User Manual

mydlink Network Video Recorder

DNR-322L

Manual Overview

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Manual Revisions

Revision	Date	Description
1.0	August 02, 2011	DNR-322L Revision A1 with firmware version 1.00
1.1	December 29, 2011	DNR-322L Revision A1 with firmware version 1.10

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Package Contents

- D-Link DNR-322L mydlink Network Video Recorder (NVR)
- CAT5 Ethernet Cable
- Power Adapter
- Cable Holder
- Keys
- Manual and Software on CD
- Quick Install Guide

Note:Using a power supply with a different voltage than the one included with your product will cause damage and void the warranty for this product.

If any of the above items are missing, please contact your reseller.

System Requirements

Hardware Requirements	• One or two 3.5" SATA hard disk drive(s)*
Network Requirements	• Broadband Internet connection (for remote access) • Network camera(s) (refer to the D-Link website for a list of supported cameras) • 10/100/1000Mbit Gigabit Ethernet switch or router
Web-based Configuration Utility Requirements/Remote PC Minimum Requirements	**Computer with the following:** • Microsoft Windows® 7, Vista®, or XP (32bits) • Pentium 4 - 2.4GHz or higher • 512MB or higher **Browser Requirements:** • Internet Explorer 7.0 or higher Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.
Optional	UPS with USB interface

*Hard disk drives should be from the same manufacturer. To ensure maximum performance, identical drives are recommended for RAID 1 configurations.

Introduction

Congratulations on your purchase of the DNR-322L 2-bay mydlink NVR.

DNR-322L is a standalone wired Network Video Recorder (NVR) which supports multi-channel network cameras with M-JPEG, MPEG4 or H.264 recording with 2 high-speed 3.5-inch SATA hard disks for long time recording. Thanks to the powerful embedded system, the NVR can record video from network cameras located in local or remote sites into a dedicated HDD storage without turn on PC.

Empowered by Mydlink technology, DNR-322L can be easily setup for internet access. It supports real-time monitoring and playback from everywhere via IE browser. The triplex function can keep recording while user live viewing or searching playback at the same time. With complete video management, display and playback ability makes it as a convenient and stable video recorder.

Features

Comprehensive IP Surveillance Solution

- **Total Solution:** The D-Link NVR is a standalone SATA RAID network video recorder capable of 24/7 recording without a PC. The NVR can manage multiple network cameras, providing direct access to view live video and play recorded data through the Internet from anywhere anytime. The device itself is compact in size and incorporates a physical security lock.
- **Easy to Use:** A user-friendly GUI simplifies network and camera setup, allowing users to easily access multiple cameras for viewing, recording, playback, and configuration.
- **Centralized Interface for Configuration:** NVR provides a flexible and economic alternative to manage and configure multiple Network cameras on a centralized web interface.
- **Megapixel Resolution Support:** The major advantage of digital over analog video is its higher resolution support. The NVR supports high resolution megapixel recording for vivid video with high clarity.
- **Empowered by Mydlink technology:** DNR-322L can be easily setup for internet access. It supports real-time monitoring and playback from everywhere via IE browser. The recording store in your own HDD with high privacy, not in the cloud.

Complete Network Functionality

- **PPPoE Support:** The D-Link NVR utilizes ADSL services. It can connect to the Internet via an ADSL modem over Ethernet.
- **DDNS Support:** Dynamic DNS is a solution for users without a fixed IP address. With DDNS service, users can connect to the NVR from the Internet using an easy-to-remember domain name.
- **NTP Support:** Maintaining an accurate record of time is essential if recorded data is to be used as evidence. To ensure that the time recording is always accurate, the NVR can update the system clock from an Internet server using the Network Time Protocol (NTP).
- **DHCP Server:** The NVR can act as a DHCP server for easy deployment when the network environment is very simple and there is no existing DHCP server.

Fully Functional Recording

1. **Flexible Recording Schedule:** Once cameras have been set up, a highly configurable scheduling system allows for continuous recording or recording during specifically allotted time frames. Each camera can be set to record independently at preset intervals. It also provides event recording based on specific triggers.
2. **Recording Automatic Overwrite:** The NVR can be configured to overwrite the oldest data automatically when Hard Disk space runs out, allowing for continuous and uninterrupted recording. Users can specify the number of days the recording should be kept (within the limits of the Hard Disk capacity). For example, if the NVR has the capacity to store 7 days of recording, using the overwrite option, the NVR will record the 8th day and delete the 1st day.
3. **Recording Stop Alert:** The NVR also provides the option to stop recording when the Hard Disk is full. When the disk reach capacity, a notification can be sent via E-mail or to an external device such as an audible alarm or LED display.

Comprehensive Data and Hardware Security

1. **Secure Data:** RAID 1 duplicates the recordings database onto two separate drives. In the event of an Hard Disk failure, data integrity is maintained on the secondary Hard Disk.
2. **Auto Boot after Power Recovery:** The NVR will boot up automatically once the power is recovered after a power outage.
3. **Access List Control:** User can specify safe and blocked IP addresses to filter the external connections; this feature increases data security.
4. **Multiple User Privilege Control:** Administrators may also choose access privileges for users by specifying the cameras they may have access to live view, playback, audio, and PTZ functions.
5. **UPS Status Monitor:** A UPS can be used as emergency power supply for the NVR. The UPS uses a USB interface to notify the NVR to perform a proper shutdown before battery power runs out.
6. **Backup Recording Data:** Recorded data is stored in a secure database. This recorded data can be backed up to additional storage locations periodically or whenever needed.

Powerful Event Management

1. **Camera Status:** The camera status page will show connection, recording, frame rate and bit rate information of each camera. Meanwhile, the estimated available recording time is also displayed for quick reference.
2. **Flexible Event Management:** Event setup is another key configuration of the NVR. The NVR can monitor all of the camera triggers from motion detection. One of the most powerful functions is notification application. The NVR centrally controls the E-mail and recording of all the connected cameras.

Instant Live View

1. **Full Screen:** Enlarge the display to full screen of live view and recorded video.
2. **Drag and Drop GUI:** With multiple channels enabled, users can change channel by drag and drop.
3. **Camera Name and Status on OSD:** Camera name and recording status are displayed via OSD to aid in identification.
4. **PTZ/Audio Support:** Users can control pan/tilt/zoom (PTZ) functions from within the interface using the provided interface buttons or by directly clicking on the video. A single camera may be viewed full-screen with optional two-way audio.
5. **Preset Point:** Presets from within the interface can be set to instantly restore a previously saved view.
6. **Digital Zoom:** Videos can be enlarged by digital zoom.

Intelligent Playback

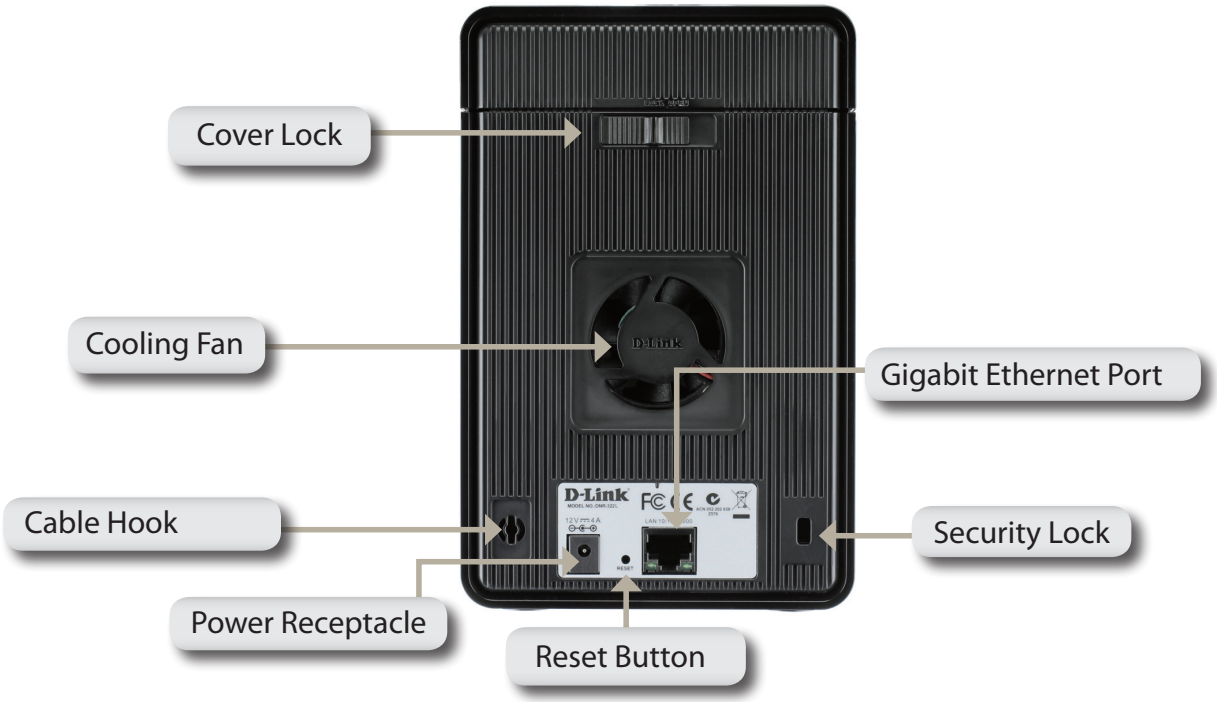
1. **AVI/ASF Outputs:** During playback, if a user uncovers video that needs to be exported, two formats are available. The AVI format will export raw video. The ASF file format will transpose a timestamp on the exported video.
2. **Playback Speed Control:** Playback speed control allows for up to 16x speed fast forward or fast backward play. The step playback option displays one frame at a time.
3. **Video Enhancement:** Users can enhance the recorded video with controls such as brightness, contrast, and sharpness.
4. **Print Picture:** If a printer is connected to the user's PC, the NVR can also print the selected still image.

Hardware Overview

Front View

COMPONENT	DESCRIPTION
Power Button	Press once to power on the NVR. Press and hold the button until the LED begins to blink to power down the NVR.
Power LED	Power LED will blink when boot, turn steady when working normal.
Drive LED	These LEDs will be solid BLUE when the drives are connected but inactive. The LEDs will blink when the drives are being accessed, formatted or synchronized. They will illuminate AMBER if a drive has failed.
USB Port	USB port for UPS status update.

Rear Panel (Connections)



COMPONENT	DESCRIPTION
Cover Lock	This lock is used to remove the cover when unlocked. Locking it will restrict the removal of the top cover.
Cooling Fan	The cooling fan is used to cool the hard drives and features speed control. When the unit is first powered on the fans rotate at a low speed and rotate at a high speed when the temperature rises above 49 °C.
Reset Button	Press this button for more than 5 seconds to reset the unit to factory defaults.
Power Receptacle	Connect the supplied power cord to the receptacle.
Gigabit Ethernet Port	Use the Gigabit Ethernet Port to connect the device to the local network. The port is equipped with both a LAN LINK (R) and Traffic LED (L) to indicate connectivity and traffic respectively to the local LAN
Security Lock	This lock can be used to tie the DNR-322L to the desk to prevent theft. Cables are sold separately.

Getting Started
NVR Software CD

To get started with the NVR Setup Wizard, insert the supplied CD into your CD-ROM drive:

Click the **Install** button to start the NVR Setup Wizard.

Installation
Setup Wizard

Insert the Installation CD-ROM into your computer's optical drive to start the autorun program.

The CD-ROM will open the NVR Setup Wizard. Simply click Start to go through the Setup Wizard, which will guide you through the installation process from connecting your hardware to configuring your NVR.

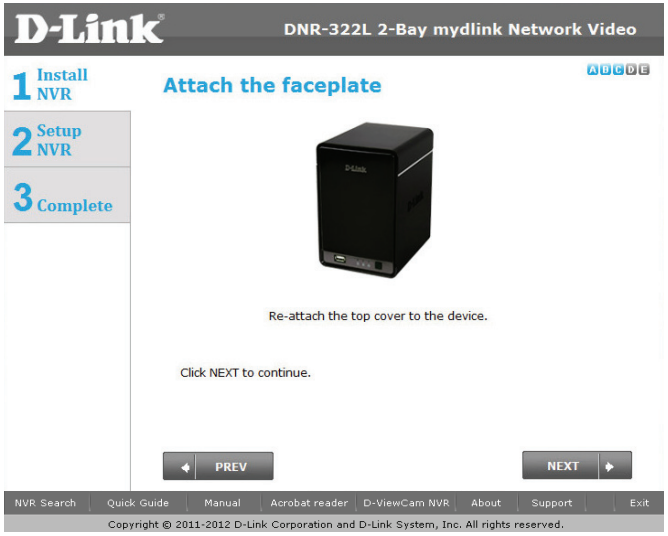
Note: *The computer used to access the* NVR *web-based configuration manager must be on the same subnet as the NVR. If your network is using a DHCP server, the* NVR *will automatically be in the same subnet.*

Install the Hard Drives

This step shows you how to open your NVR so that you can install one or two hard drives. Click **Next** to continue.

Slide either one or two hard drives into the open hard drive bays of your device. Click **Next** to continue.

Once the hard drives are installed, you can attach the top cover. Click **Next** to continue.



A standard CAT5E Ethernet cable with a RJ-45 connector is needed to connect your NVR to your network. Click **Next** to continue.

Power and Device Selection

Connect the power adapter to the power receptor on the back of the device. Press the power button located under the faceplate LEDs to turn on the device. Click **Next** to continue.

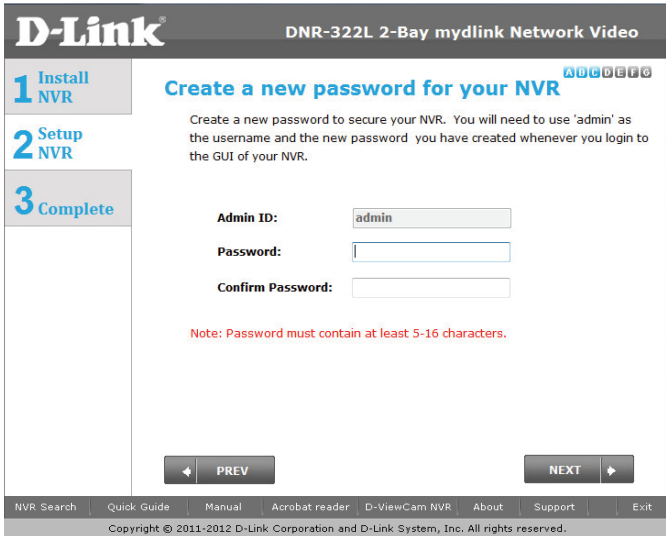
With the power on check that the Power LED is solid. If it is solid, answer **Yes** to the confirmation window otherwise select **No** and wait for the power connection to the NVR. If the connection is good then check that the hard drives are installed correctly and have no other issues. Click **Next** to continue.

Note: When you select your device from the list, it will cause the LEDs to blink to confirm the device selection.

Admin password

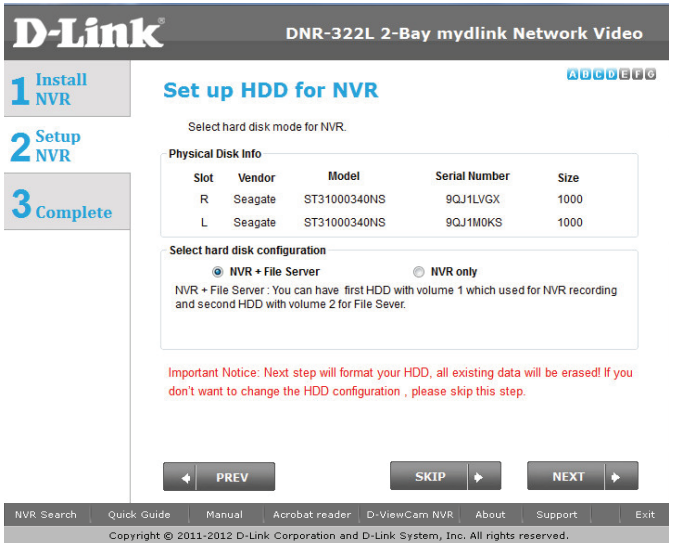
This window requests the Admin (administrator) password. If this is the first installation of this device then the password will be blank. Click **Next** to continue.

In this step you can create a new password for the Admin username. It is recommended you set a password however you may also leave the fields blank. Click **Next** to continue.



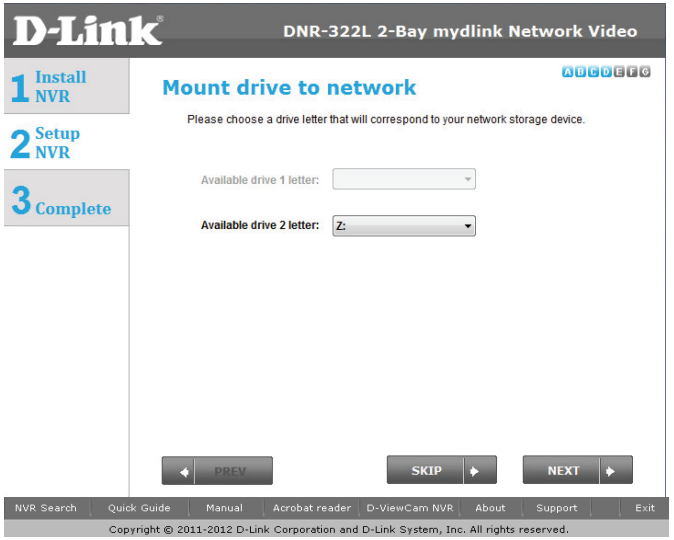
RAID Configuration and Drive Mapping

Select one of the Volume File Systems type. Clicking on each file system type radio button will give a description below.



Click **Next** to continue.

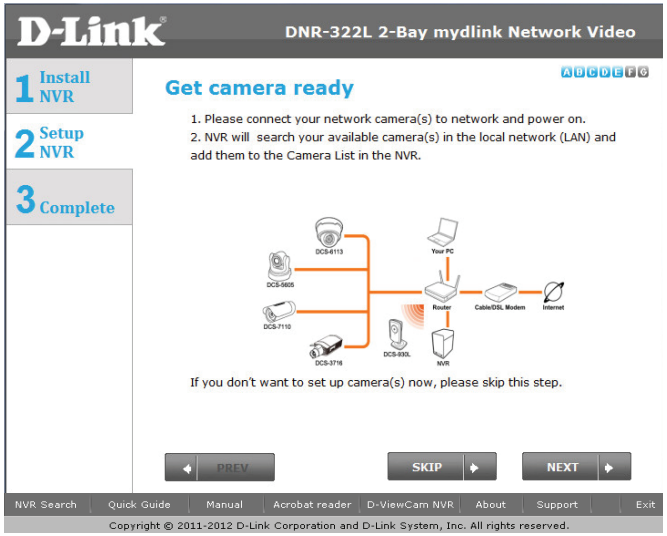
This step allows you to map the volume created as a network drive on your computer. Click **Next** to continue.



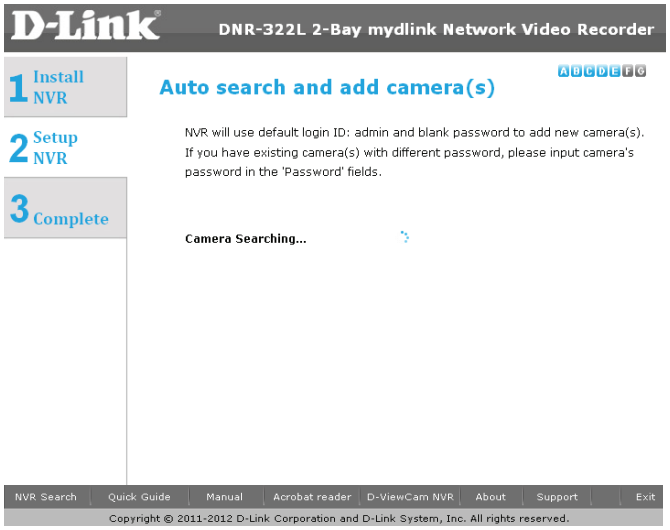
Note:
1. Only Volume 2 is able to format as a File Server and mount to your Windows system as a Network Drive.
2. You can also use "NVR Search" utility to set up the Network Drive mapping.

Search Camera

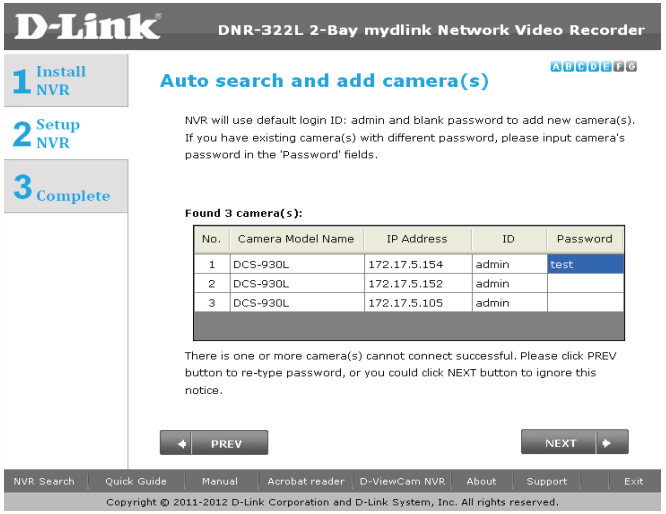
Please connect your network camera(s) to the network and power on.
The NVR will search for your available camera(s) in the local network (LAN) and add it to the camera list in the NVR.



NVR will use default login ID: admin and blank password to add new camera(s).
If you have an existing camera(s) with a different password, you can change the password in the Password field in the camera list.



Find the camera in the camera list and type the camera's password in the Password field.

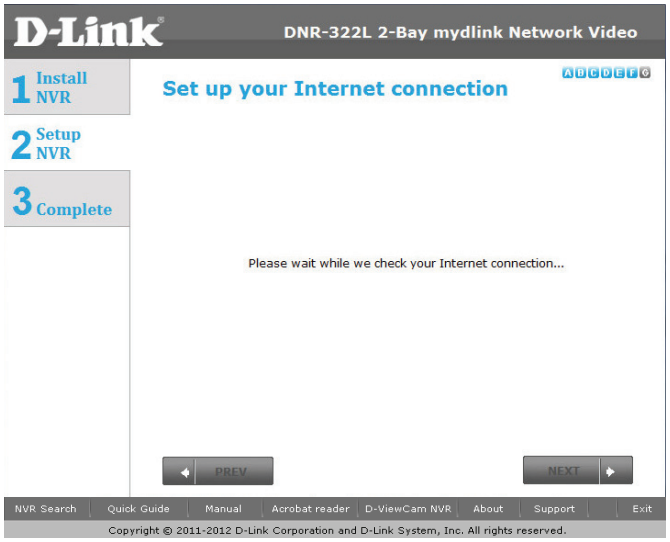


Set up Internet connection

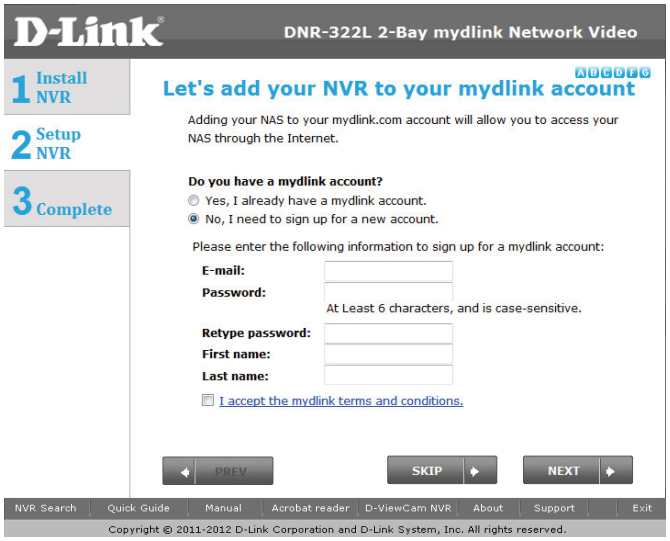
Setup Wizard will try to connect to the Internet.

Note:

If the NVR is not able to connect to the Internet, Setup Wizard will allow you to set up the "PPPoE" or "Static IP" for Internet connection. (Need to contact your ISP for the setup details). If you don't don't have the Internet connection information right now, or you don't want to connect to the Internet, the Setup Wizard will guide you to go through the "Local Access" process later.

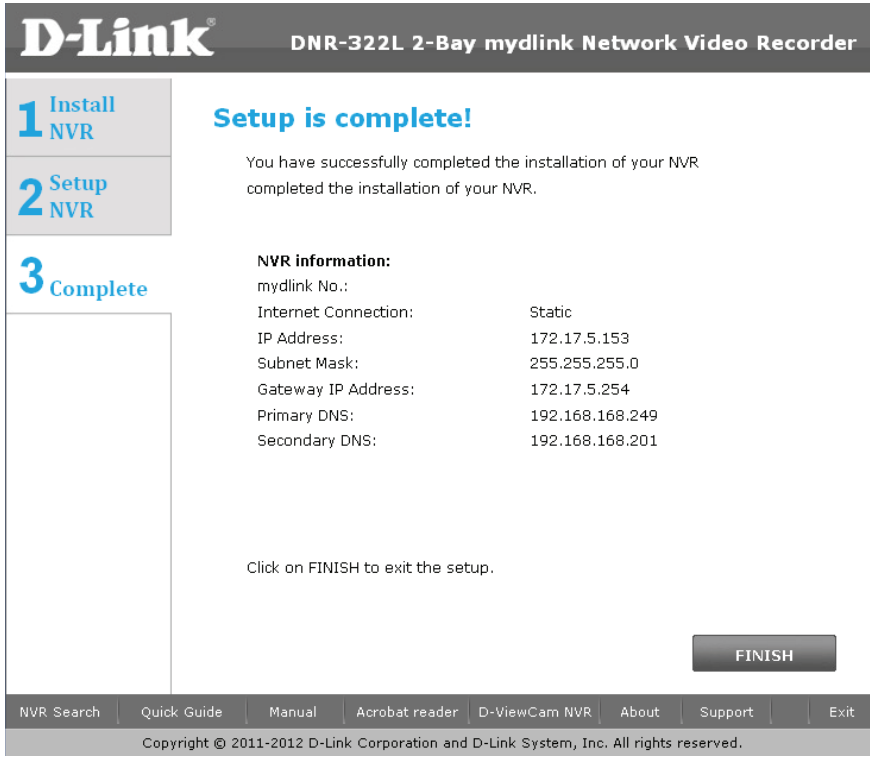


If the NVR is able to connect to the Internet, you will need to login to mydlink or create a new mydlink account first.



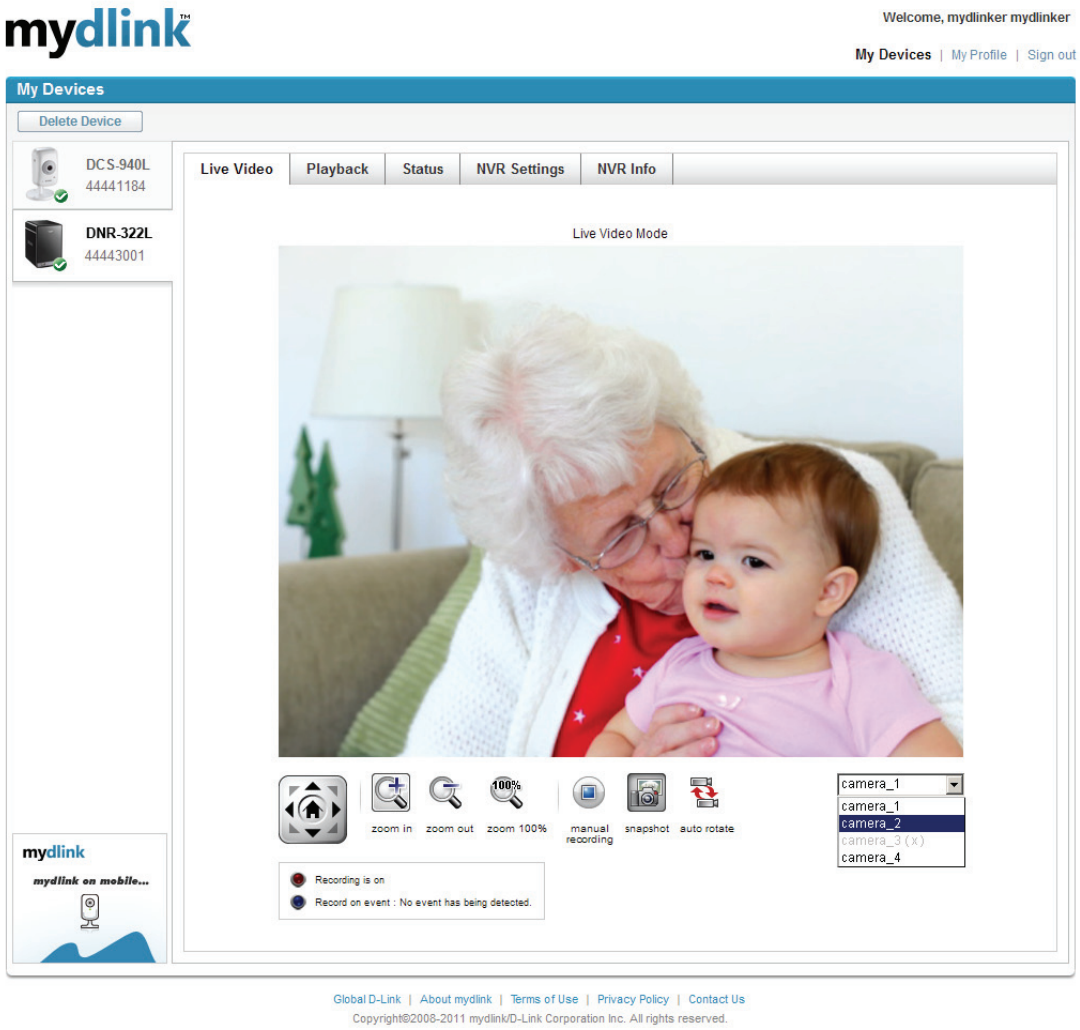
The final window of the installation wizard shows successful completion. Your device is now installed and ready for use.

Note:
Your drives are network mapped, so you will be able to access them under My Computer.



mydlink Portal

After registering your NVR with a mydlink account in the NVR Setup Wizard, you will be able to remotely access your NVR from the www.mydlink.com website. After you log in to your mydlink account, you will see a screen similar to the following:



NVR Status

Here, you can see the online status of each of your NVRs. Your online status may be one of the following:

A green checkmark indicates that your NVR is online and ready to use.

A yellow exclamation point indicates that your NVR is online, but the NVR password has changed. You will need to enter your new NVR password to access your NVR again.

A red x indicates that your NVR is offline and currently cannot be accessed remotely.

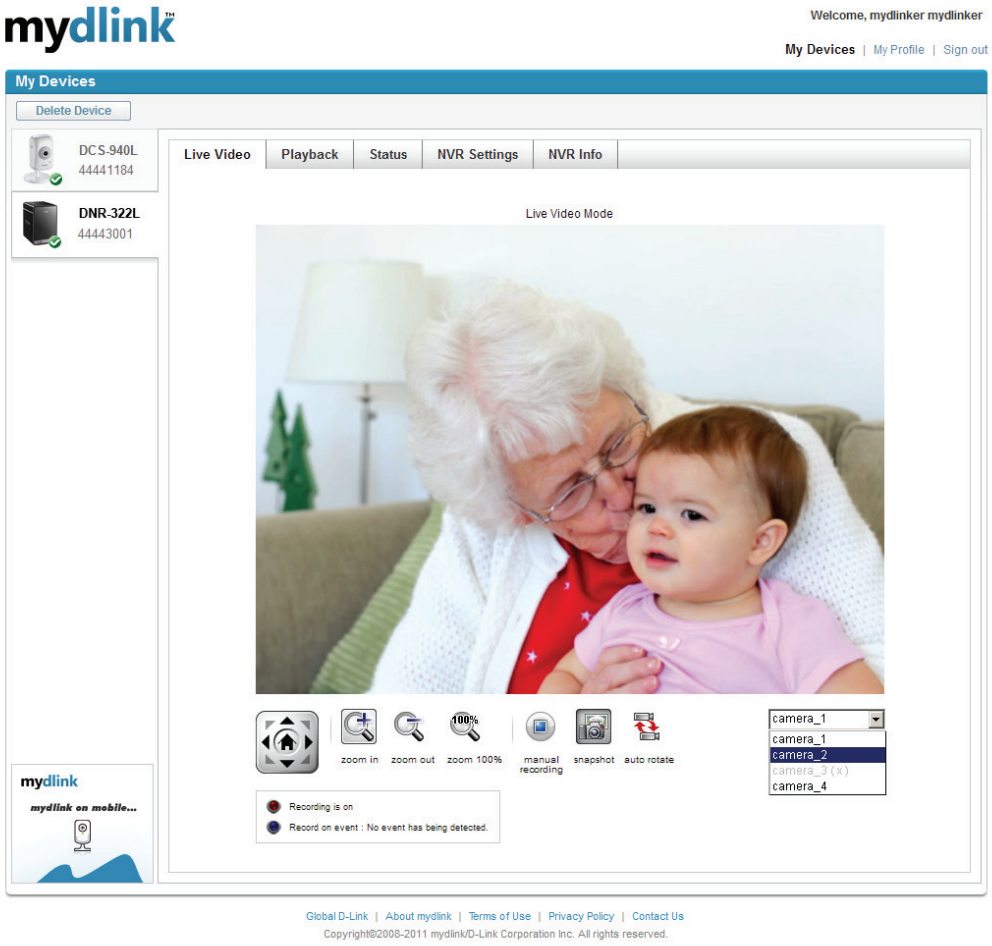
If your NVR is offline, try the following:

- Check to make sure that the Internet connection to your NVR is working properly.
- Try restarting your Internet router.
- Check your NVR's cable connections and make sure they are secure.
- Check to make sure that the LED on your NVR is lit solid blue.

If you still cannot access your NVR, reset your NVR and run the NVR Setup Wizard again from the CD-ROM included in your package.

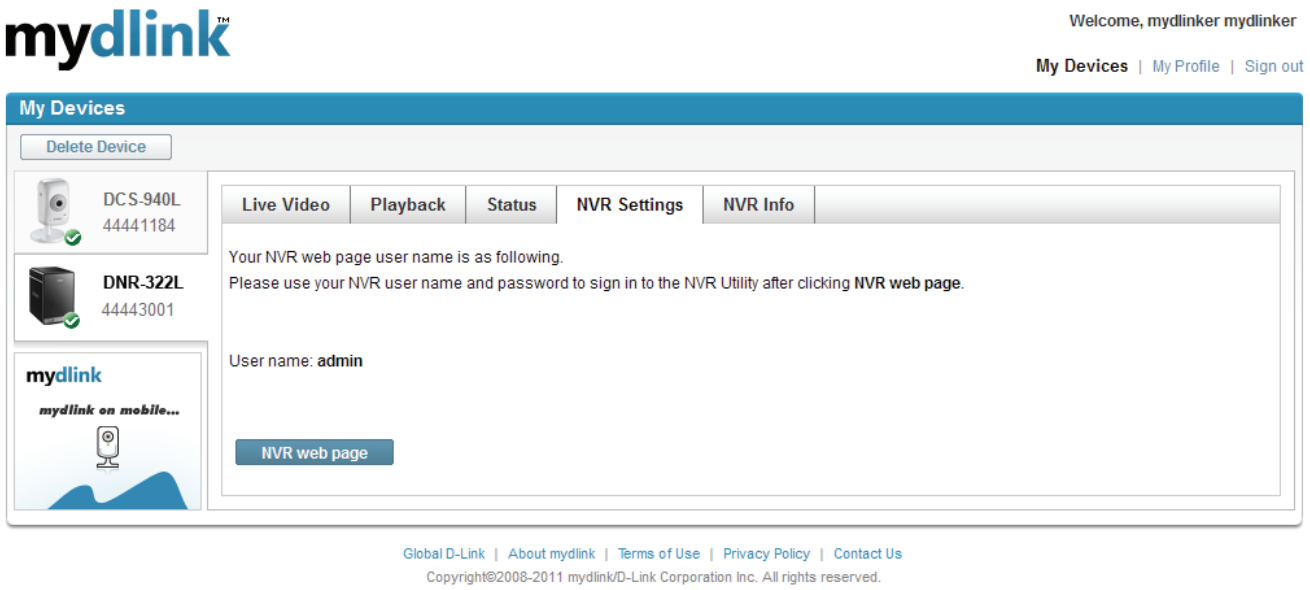
Live Video

In the main part of the screen, the Live Video tab will be selected by default. If the NVR is available, you will need to login NVR first, default login ID is "admin", password is blank. The Live Video feed will then be displayed. You can choose a different camera from the drop down list. If the NVR is recording, you will see the red dot icon at the right top coner.



NVR Settings

The NVR Settings tab allows you to access your NVR's configuration interface. To open your NVR's configuration interface, click **NVR web page** and enter the password.



NVR Info

The NVR Info tab shows you various information about your NVR.

Device Name: The Device Name is a unique name that if can help you to identify it. Clicking on the Device Name will open a window for you to login to your NVR's configuration interface.

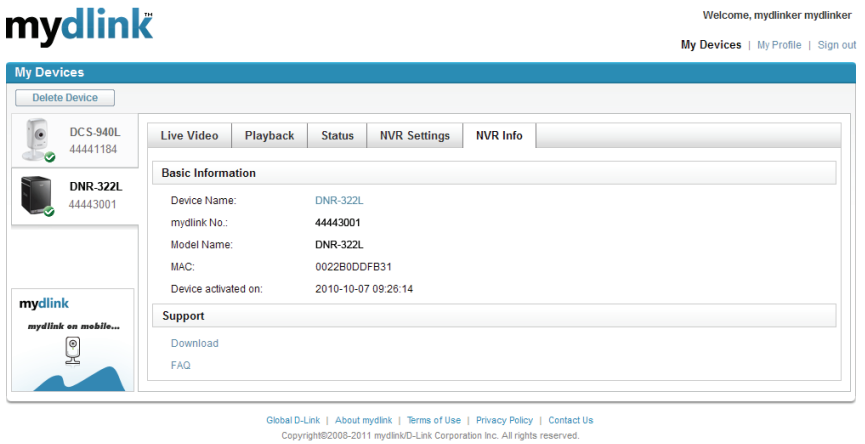
mydlink No.: Displays the mydlink number of your device.

Model Name: Displays the model name of your device.

MAC Address: Displays the MAC address of your device.

Device activated On: Displays the time and date that your device was added to mydlink.

Support: This section provides you with links to various support websites and downloads related to your product.



D-Link NVR Search Utility

You can insert the CD and click "NVR Search Utility" to run another useful setup tool. When first powered on, during the initial boot sequence, the device will wait to be assigned an IP address via DHCP. If it does not receive a DHCP assigned IP address the Auto-IP process will assign a 169.254.xxx.xxx address to the device If you want to change the IP address before login in or are unable to connect to the NVR IP address, you can use the NVR Search Utility provided on the product CD to locate the device on your network and make any needed changes.

Network Video Recorder: The D-Link NVR Search Utility displays any NVR devices it detects on the network.

Refresh: Click to refresh the device list.

Configuration: Click **Configuration** to access the Web-based configuration of the NVR.

LAN: Configure the LAN Settings for the NVR here.

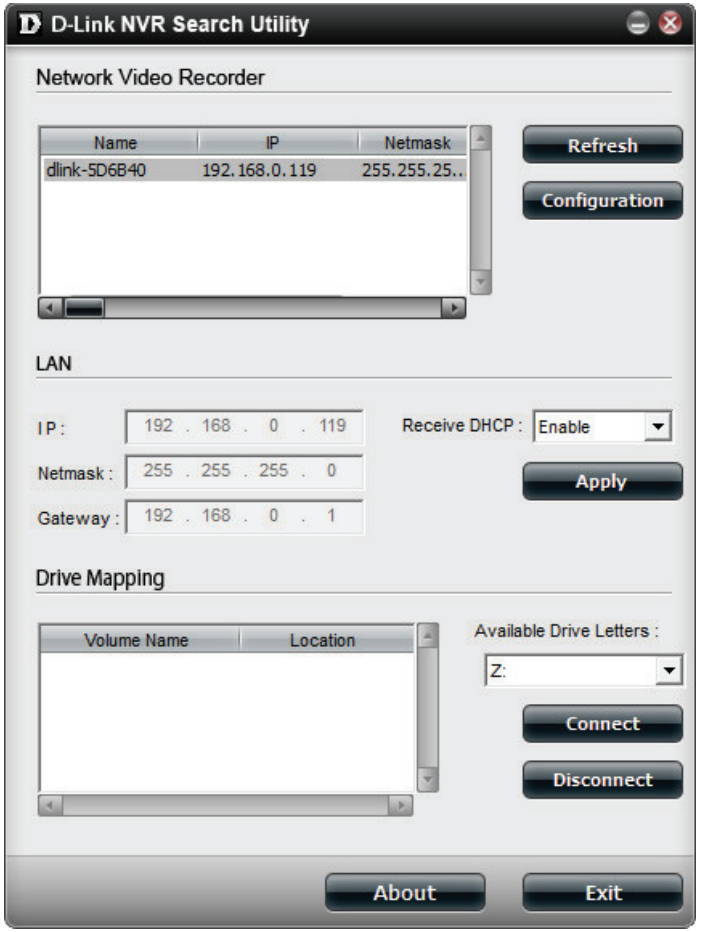
Apply: Click **Apply** to save and activate the changes to the LAN Settings.

Drive Mapping: Volumes available for mapping are displayed here.

Available Drive Letters: Select an available drive letter. Click **Connect** to map the selected volume. Click **Disconnect** to disconnect the selected mapped volume.

About: Click **About** to view the software version of the NVR Search Utility.

Exit: Click **Exit** to close the utility.



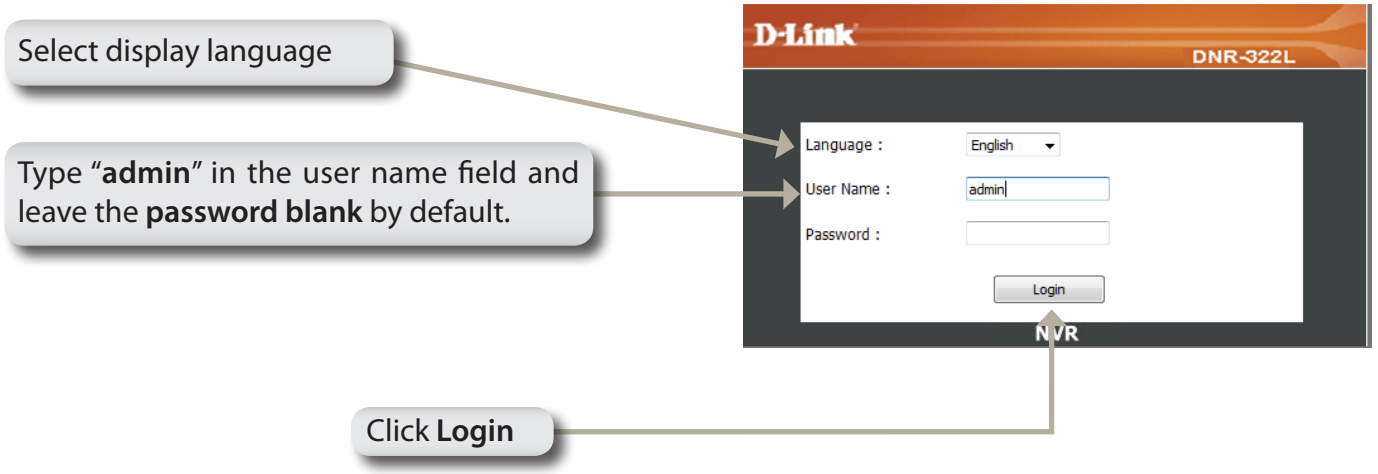
Select the device from the list and click the **Configuration** button. This will launch the computer's default web browser and direct it to the IP address listed for the device. Make sure the browser is not configured to use a proxy server.

Note: *The computer used to access the NVR web-based configuration manager must be on the same subnet as the NVR. If your network is using a DHCP server and the computer receives IP settings from the DHCP server, the NVR will automatically be in the same subnet.*

Web UI Login

This section will show you how to configure your new D-Link NVR using the Web-based Configuration Utility.
To access the configuration utility, click the NVR name or IP on the **NVR Search Utility** or manually open a web-browser (Internet Explorer only) and enter the IP address of your NVR.

The Login screen will appear:

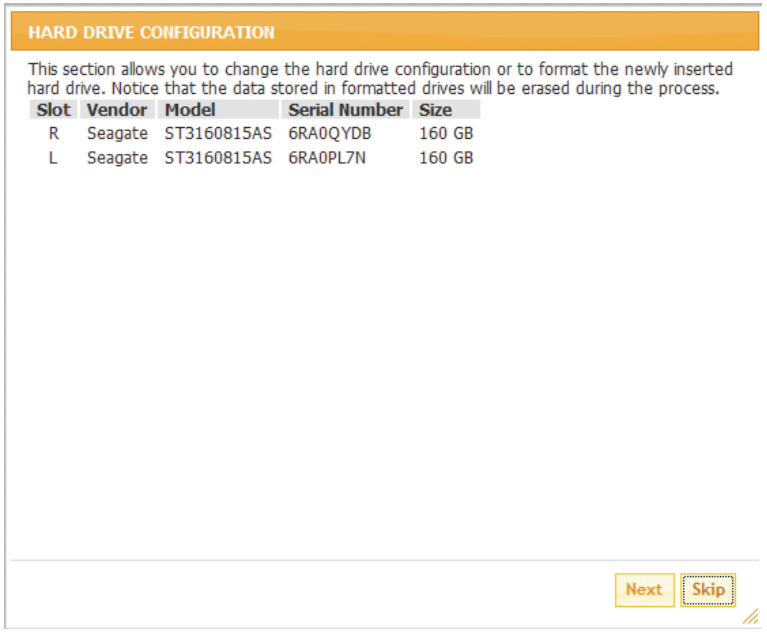


When loggin to the NVR for the first time, you will be asked to choose a drive configuration type and format the drives. There are four options: **Standard**, **JBOD**, **RAID 0** and **RAID 1**. **Standard** configures each disk as a separate volume, while **JBOD** combines both disks into a single volume. See page 48 for more details on using the RAID configurations.

Note: Refer to page 45 for instructions on how to change the password of your admin account.

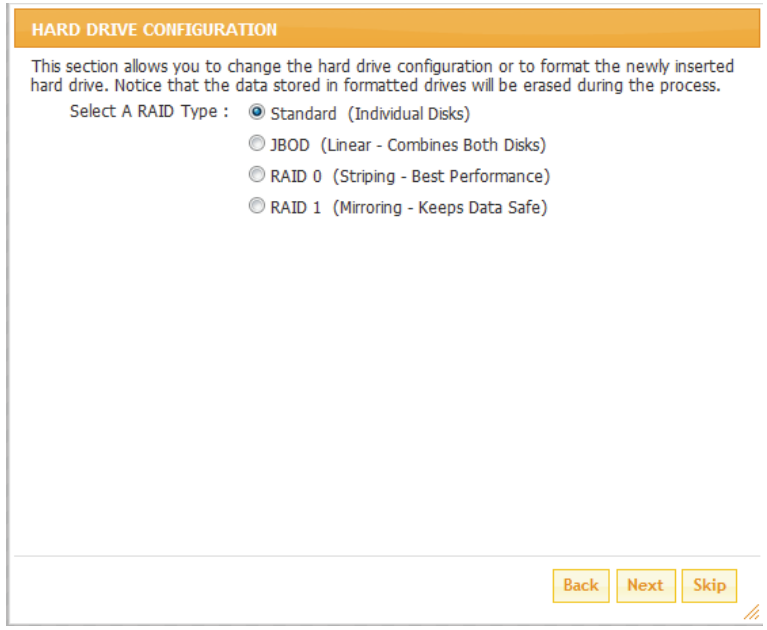
Configure Hard Drive

If HDD is exist, this screen displays the currently installed HDD information.



You must decide on the RAID type you would like to format your HDDs with. Click the Next button to continue or click Exit to cancel.

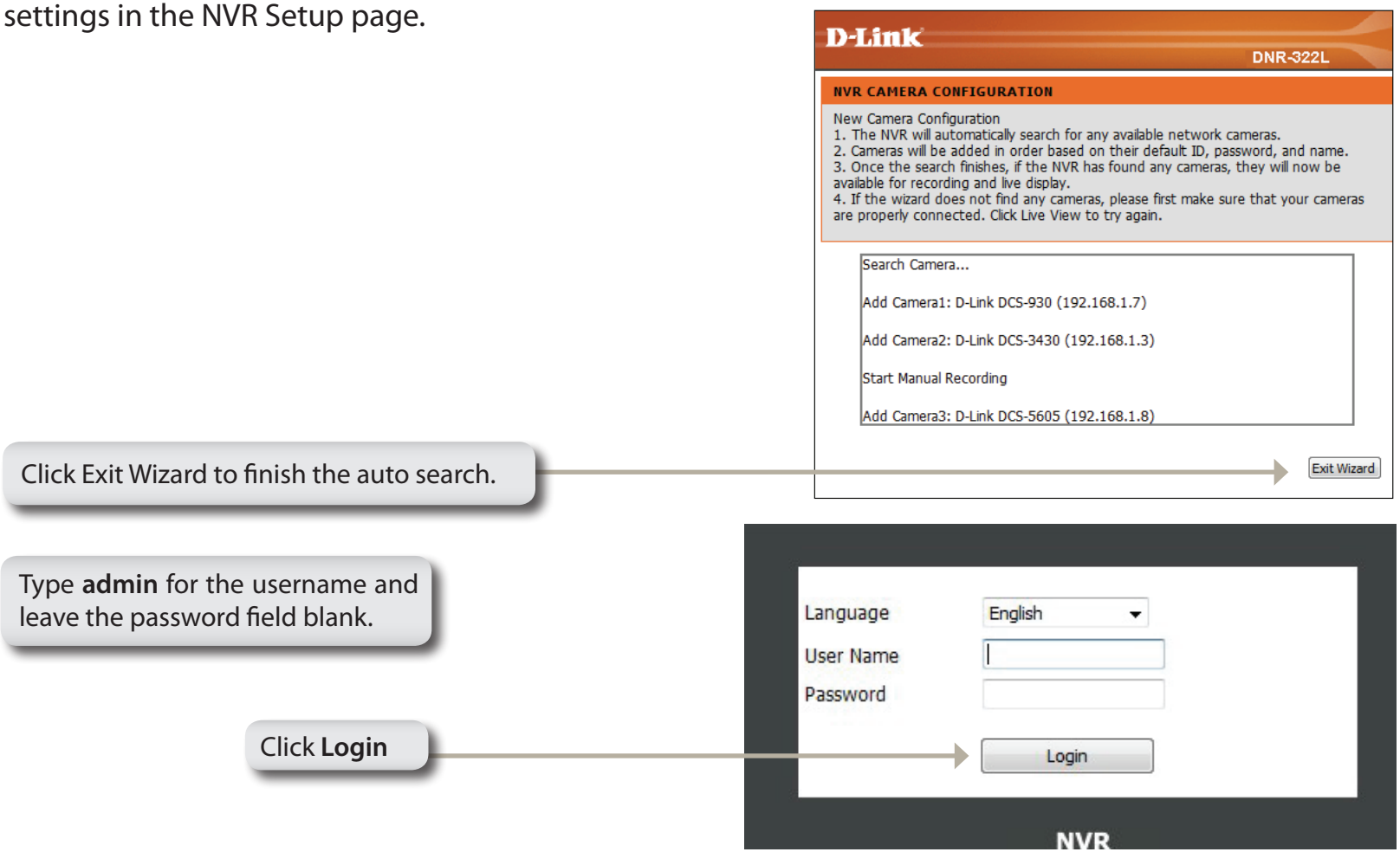
Note: Any data on the installed hard drives will be lost by the formatting!



Auto Search Camera

Please connect your network camera(s) to network and power on them.
NVR will search your available camera(s) in the local network (LAN) and add them to the NVR List in the NVR automatically.
NVR will use default login ID: admin and blank password to add new camera(s).
If there are camera(s) found, NVR will start manual recording at the last step.

Note:
If you have existing camera(s) with different ID and password, NVR will add the camera(s) but not able to connect and record. You can change the settings in the NVR Setup page.



After login, you will be redirected to the NVR web UI:

Web UI

The main categories for configuration are located on the menu tabs at the top of the page. These categories include:

- **LIVE VIDEO** - Shows the live video of network cameras and controls PTZ functions.
- **PLAYBACK** - Displays recorded video and exports snapshots or video.
- **SETUP** - Contains the NVR setup wizard, as well as the LAN configuration settings, camera search, camera settings, recording schedule, auto backup, event settings, time and system settings, and device settings.
- **MAINTENANCE** - Contains the Administrator account configuration options, Hard Disk management options and RAID configuration options. System configuration, backup, and restore functions are also available.
- **STATUS** - Contains system, NVR, and event logs.

These pages and their configuration options will be discussed in detail in the following pages of this manual.

Configuring the NVR

BASIC OPERATION

You may run the wizard to configure the setup for your NVR. There are basic and advanced operations. You must first configure the basic operations in order to activate and utilize the features of our NVR.

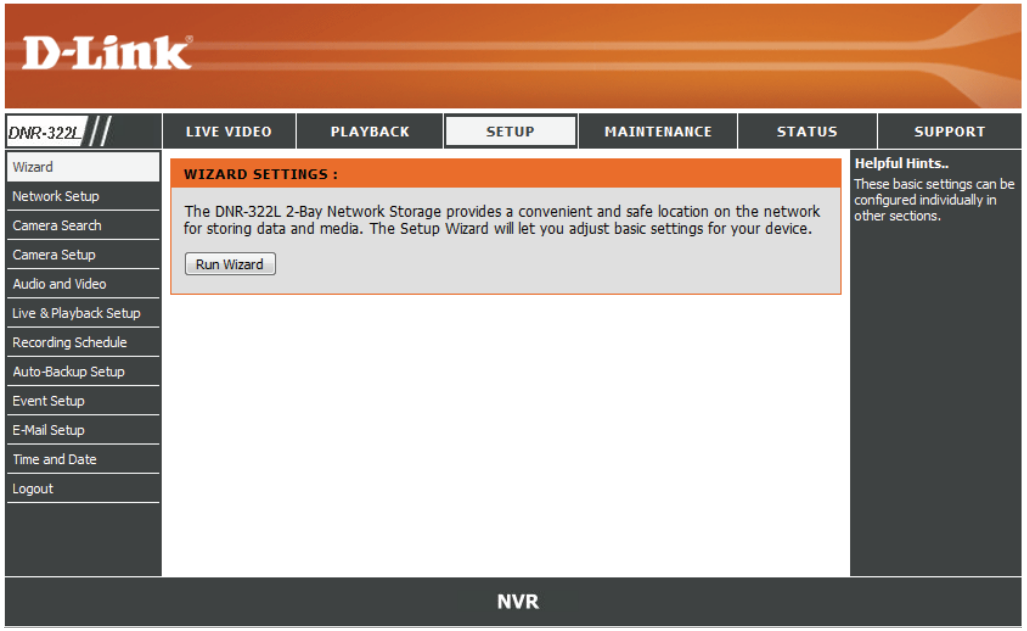
Step 1: **Camera Search** - Search for a network camera using UPnP and add it to the NVR camera list.
Step 2: **Recording Schedule** - Configure a camera for recording and create a detailed schedule. Users can also simply choose **Always Record** and select connected cameras.

After completing the above settings, the NVR will be fully functional.

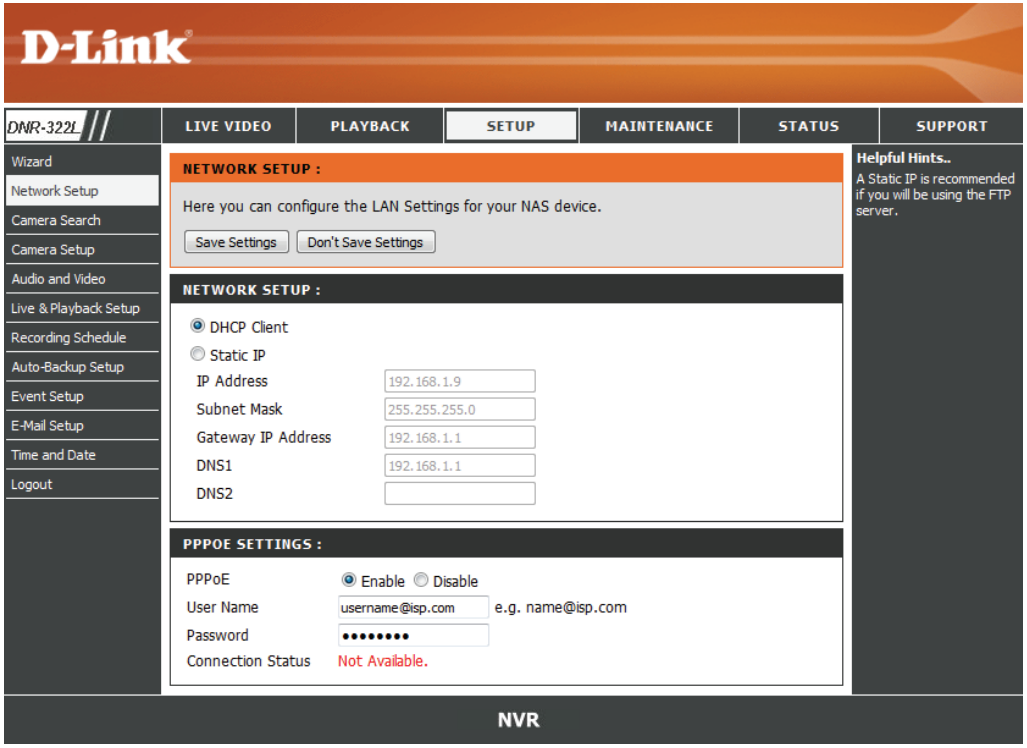
ADVANCED OPERATION

Step 1: **E-mail Setup** - Configure the E-mail address and messages for event notification.

Step 2: **Event Setup** - Configure event options with various combinations. Events can be triggered in the event of camera motion detection or full hard disk warning. An event action can be configured to send E-mail.



Network Setup



DHCP: Select this connection if you have a DHCP server running on your network and would like a dynamic IP address to be automatically updated to your NVR.

Static IP: You may obtain a static or fixed IP address and other network information from your network administrator for your NVR. A static IP address will simplify access to your NVR in the future.

IP Address: The fixed IP address.

Subnet Mask: The default value "255.255.255.0" is used to determine if the destination is in the same subnet.

Gateway IP Address: The gateway forwards frames to destinations in a different subnet. Invalid gateway settings may cause the failure of transmissions to a different subnet.

DNS1: Primary domain name server that translates names to IP addresses.

DNS2: Secondary domain name server to backup the primary one.

PPPoE Settings: Enable this setting if your ISP (DSL service) is using PPPoE. You may already have a Username and Password provided by your ISP, or you may need to contact your ISP. The connection status will be determined automatically by the system.

DHCP server: Enable or disable the DHCP server. If your network doesn't have DHCP server, enable NVR DHCP server for easier local network setup.

Camera Search

Step 1: Click the **Search** button to search for UPnP cameras. The system will list all the available cameras at this moment. Click the "✚" icon to add this camera into your camera list. If the cameras are already added, it will mark as red word.

Step 2: After clicking the icon, the camera setting page will pop-up. Click on the camera that you want to add.

Step 3: Enter the camera name, user name, and password of the camera.

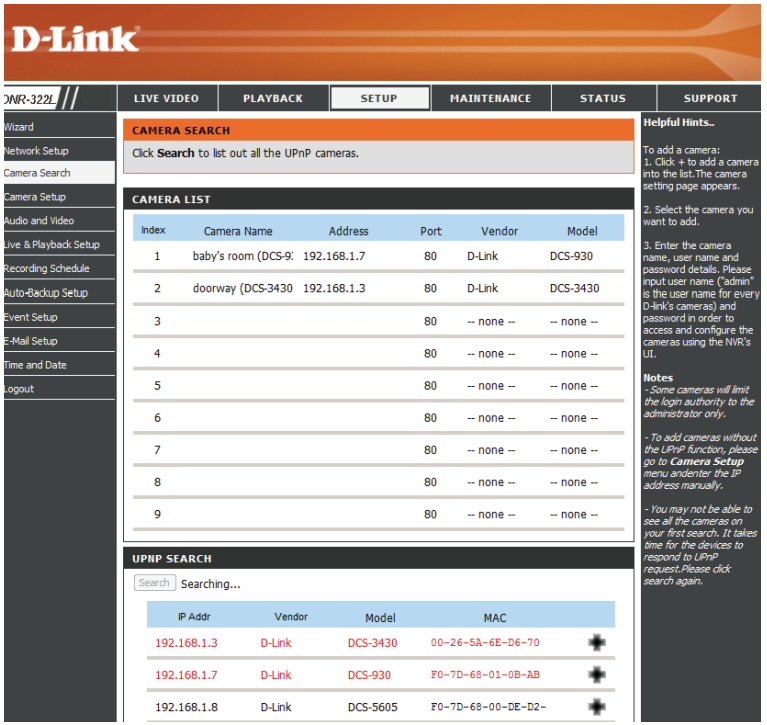
Note

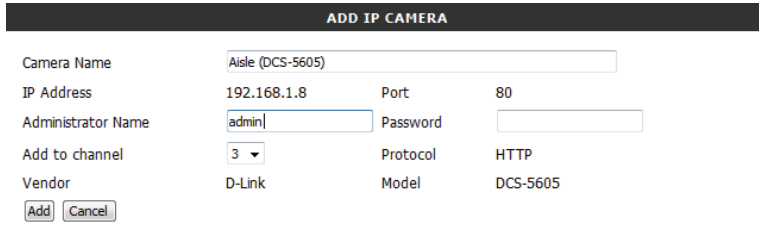
- Some cameras will limit the login authority to the administrator only.
- To add cameras without the UPnP function, please go to the camera Setup menu and enter the IP address manually.
- You may not be able to see all the cameras on your first search. It may take a moment for the devices to respond to the UPnP request. Please click ***Search*** again if cameras are not immediately displayed.

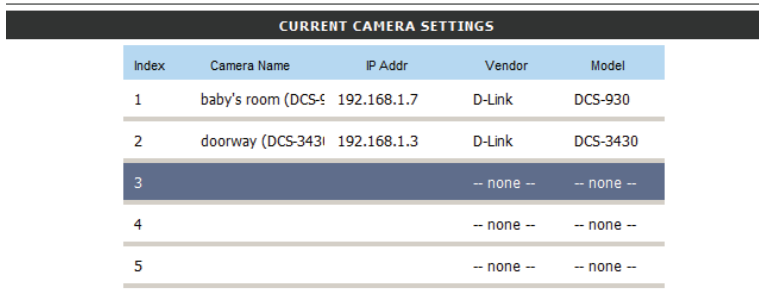
Step 4: Click the **Add** button to add the selected camera.

Step 5: After clicking **Add**, the updated information will be displayed in the camera List.

Step 6: Repeat step 2 through 5 to add other cameras into your list.







Camera Setup

Step 1: Select the camera which you would like to modify.

Step 2: Modify its information on the top of the page.

Step 3: Click the **Save Settings** button.

Step 4: If you would like to replace a camera, select that camera, modify its address, port, user name, and password, and then click the **Save Settings** button.

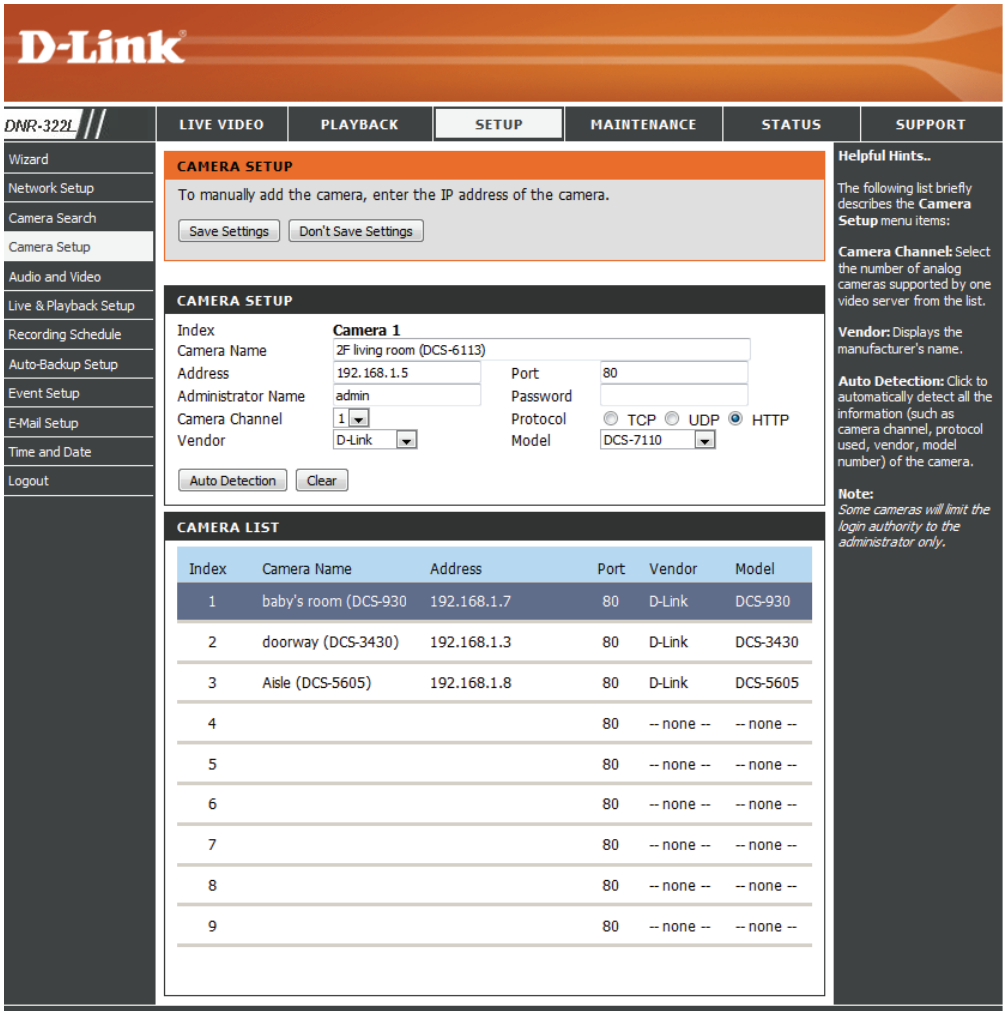
Camera Channel: Select the number of analog cameras supported by one video server from the list.

Vendor: Displays the manufacturer's name.

Auto Detection: If you have already input the camera IP, you may simply click this button to automatically detect camera information (such as the channel, protocol, vendor, and model number).

Note

Some cameras will limit the login authority to the administrator only.



Audio and Video

This section will allow you to configure and modify the audio and video parameters for each camera.

Step 1: Select the camera which you would like to modify in the camera list.

Step 2: NVR will display the parameters for the selected camera. You can modify the information at this page.

Camera Name: The name of the camera.

Video Format: Select the video format the camera supports.

Frame rate: Select the frame rate.

Resolution: Select the resolution.

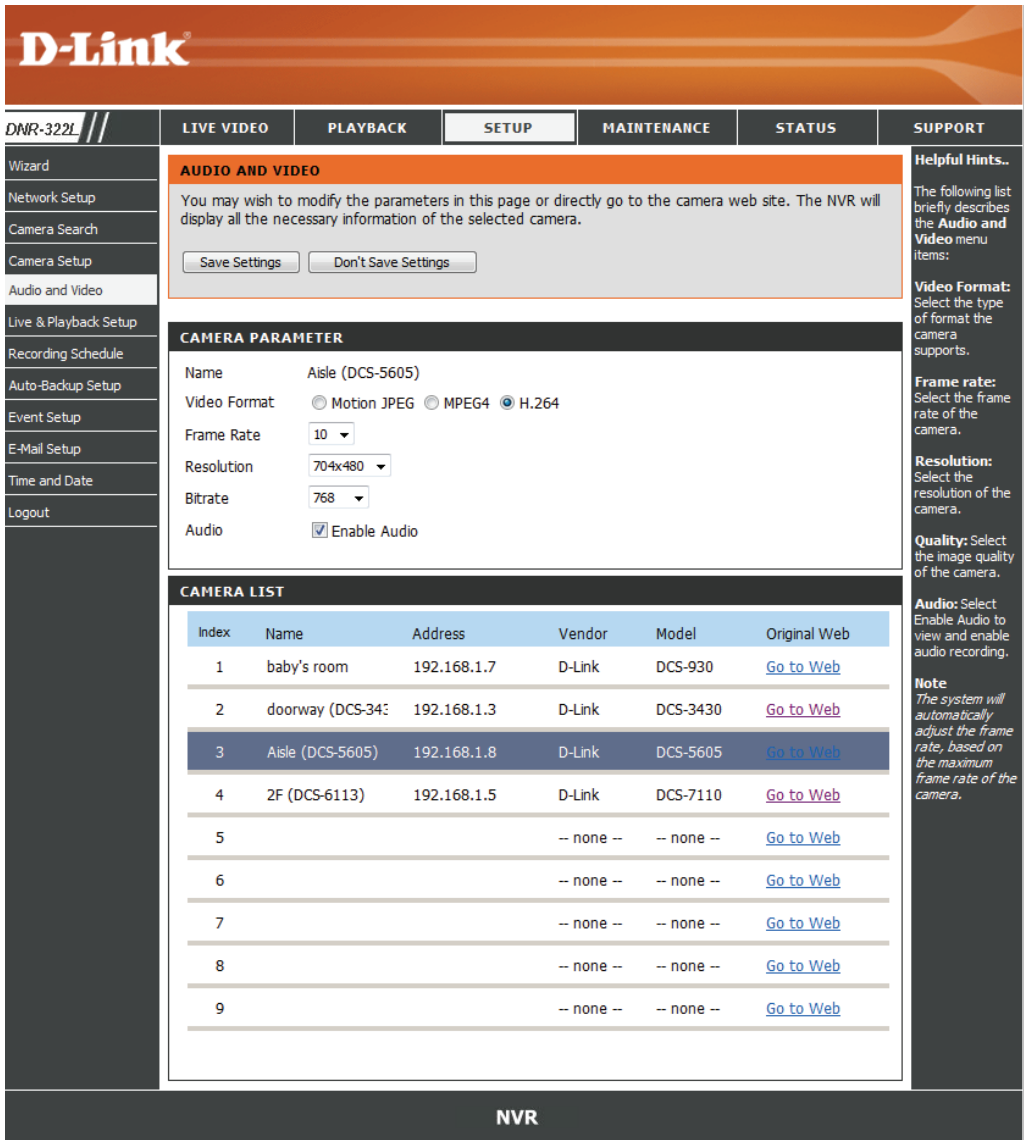
Quality: Select the image quality.

Audio: Check the **Enable Audio** option for live view and recording

Go to Web: Click to connect to the web page of the selected network camera for advanced setup. For example, motion detection should be configured via the camera web interface to enable the NVR to receive the trigger message.

Step 3: Click the **Save Settings** button.

Note: The system will adjust the frame rate automatically based on the maximum frame rate which that camera can support.



Live and Playback Setup

Live Streaming Server

Port: Enter the live streaming transmission port.

Maximum Connections: Enter the maximum connections for remote access. The maximum number of remote connections is 32.

Playback Server

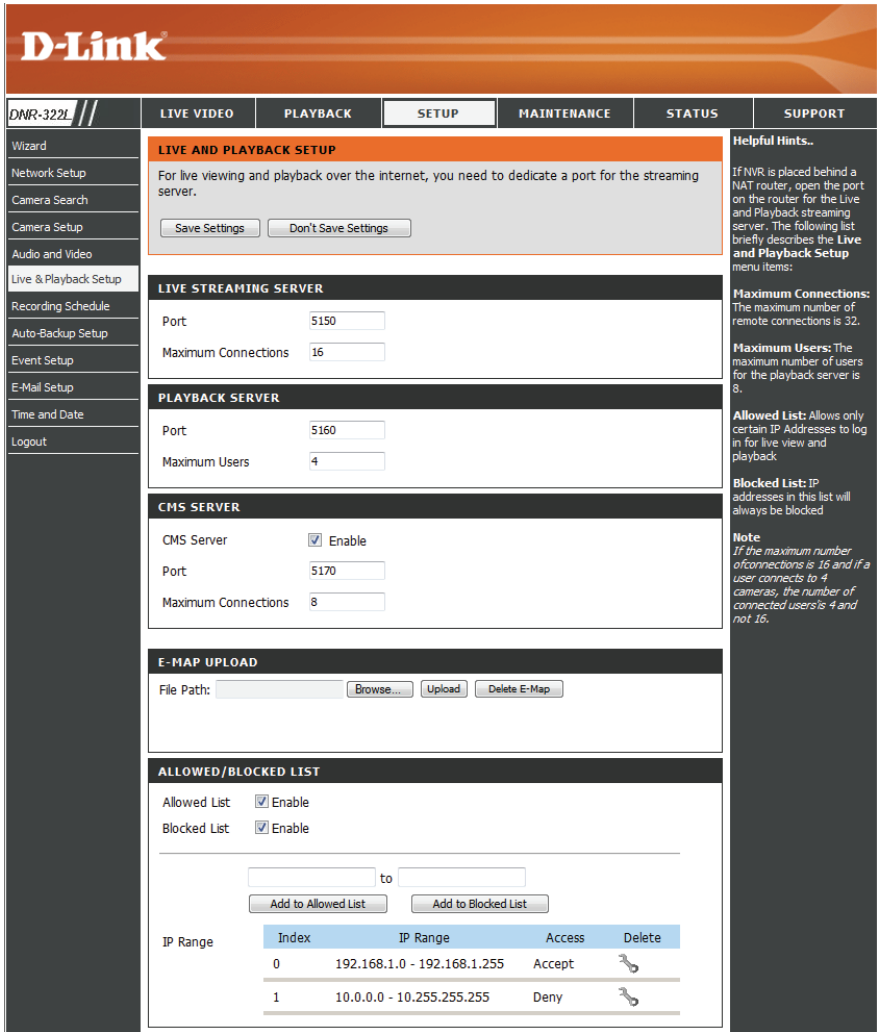
Port: Enter the playback transmission port.

Maximum Users: Enter the maximum number of users who can access playback functions at the same time. The maximum number of users for the playback server is 8.

Emap: upload your map with camera location to NVR. Max. size 20KBytes of BMP and JPG file.

CMS Server: NVR supports 3rd party* CMS(Central Management System). It is able to be connected to CMS as a client.
CMS Server: Check the Enable option to enable CMS service.
Port: the port number through which the CMS connects to this NVR.
Maximum Connections: The maximum number of allowed CMS connections.

Note: For detail 3rd party information, please contact local D-Link office.



Allowed / Blocked List: **Allowed List:** IP addresses in this list can always access your NVR.
Blocked List: IP addresses in this list will always be blocked

Note: When setting Maximum Connections in Live Streaming Server settings, 1 connection means that 1 user can connect to 1 camera only. If the maximum number of connections is 16 and if each user connects to 4 cameras, then the maximum number of connected users is 4 and not 16.

Recording Schedule

Set Recording Mode

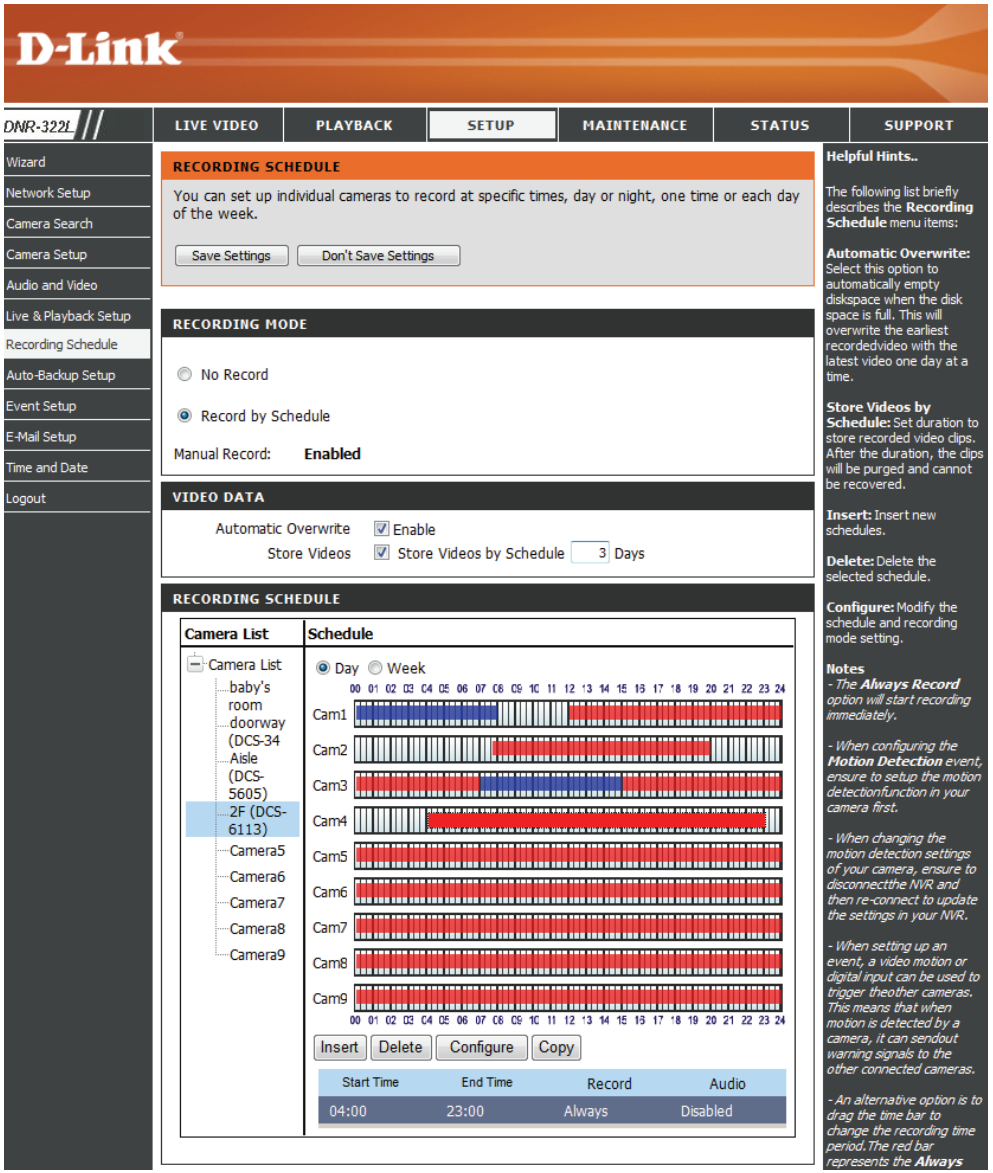
No Record: Turn off recording.

Record by Schedule: Record according to the schedule0

Manual Record: Manual record will record video always. it has highest priority. It can be enabled/disabled at the Live Video page.

Automatic Overwrite: Select this option to automatically empty disk space when the disk space is full. This will overwrite the earliest recorded video with the latest video one day at a time.

Store Videos by Schedule: Set the duration to store recorded video clips. After the duration, the clips will be purged.



Set Recording Schedule

Set Recording Schedule

Day: Schedule the cameras to turn the recorder on and off at the same time every day according to your preference.

Week: Schedule the cameras differently for each day of the week.

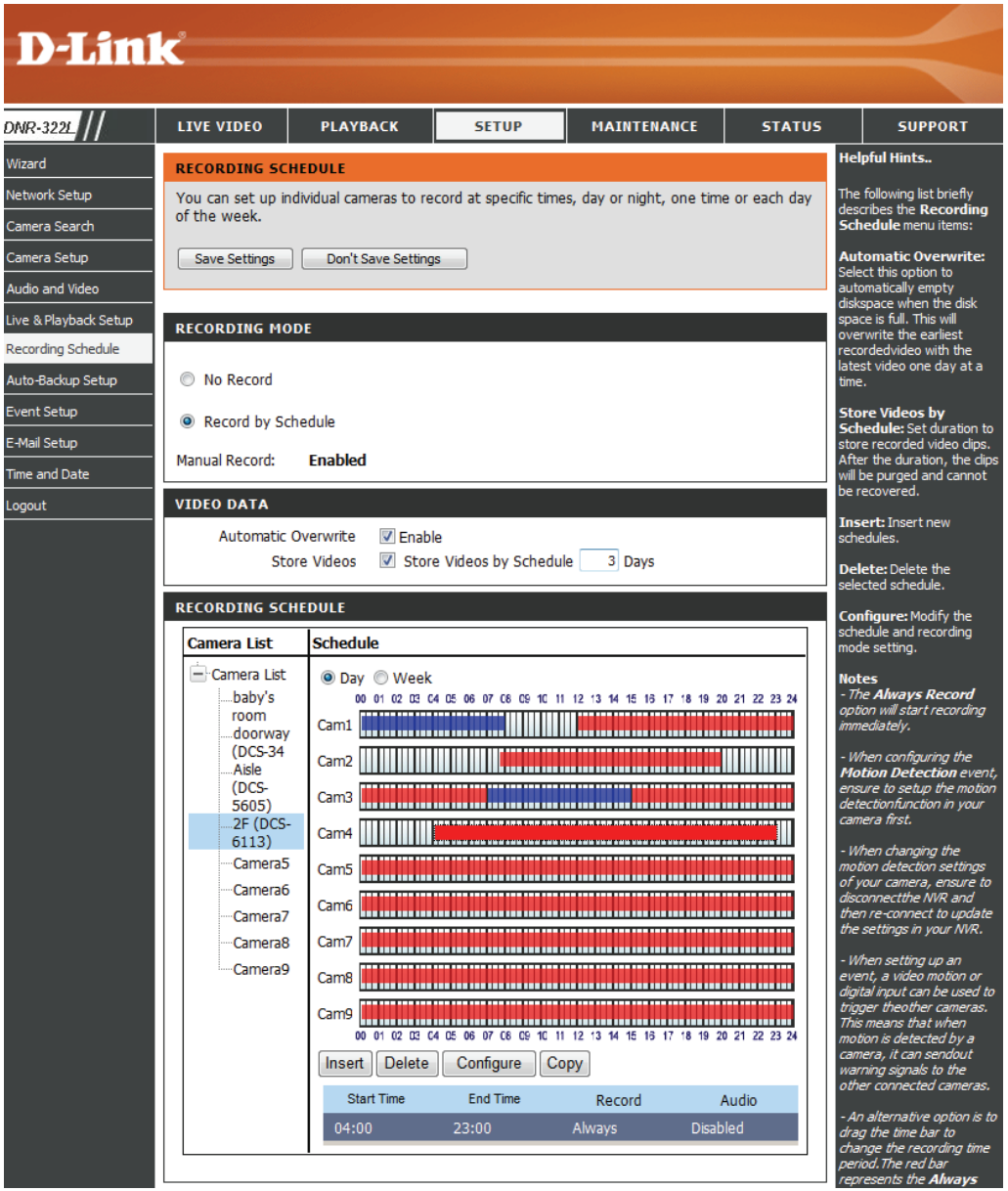
Setup the Schedule: Step 1: Click the schedule of the camera which needs to be modified.
Step 2: Click the column at the bottom of the page.
Step 3: The default recording schedule is from 00:00 to 24:00. If you would like to modify the time slot, click the Configure button to modify the default settings first.

Insert: Insert new schedules.

Delete: Delete the selected schedule.

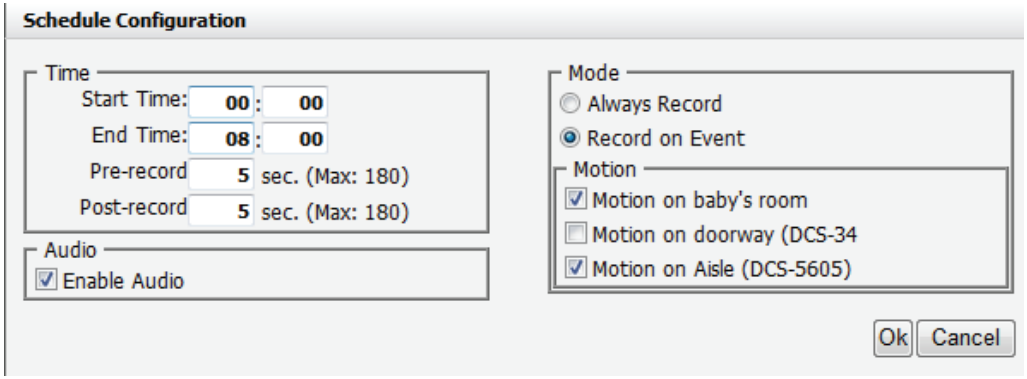
Configure: Modify the schedule and recording mode setting.

Copy: Copy current Day Schedule to other channel(s); copy current Week Schedule to other day(s) of a week or to other channel(s).



Recording Schedule

Set Recording Schedule Configuration



Step 1: Enter the desired **Start Time** and **End Time**.

Step 2: Enter pre-record period and post-record for event trigger recording.

Step 3: Check the enable audio box to record audio from your camera (if supported).

Step 4: Choose the recording mode and the trigger source.

Step 5: Press **OK** to add this new schedule.

Step 6: If you would like to add another new schedule, click the **Insert** button.

Note:

- When configuring the Motion Detection event, be sure to set up the motion detection function on your camera first.
- After changing the motion detection settings of your camera, be sure to disconnect the camera from the NVR and then re-connect it to update all new changes.
- Alternatively users can drag the time bar to change the recording period. The red bar represents the ***Always Record*** feature and the blue bar represents the ***Event Recording*** feature.

Event Setup

Step 1: Select the event below.

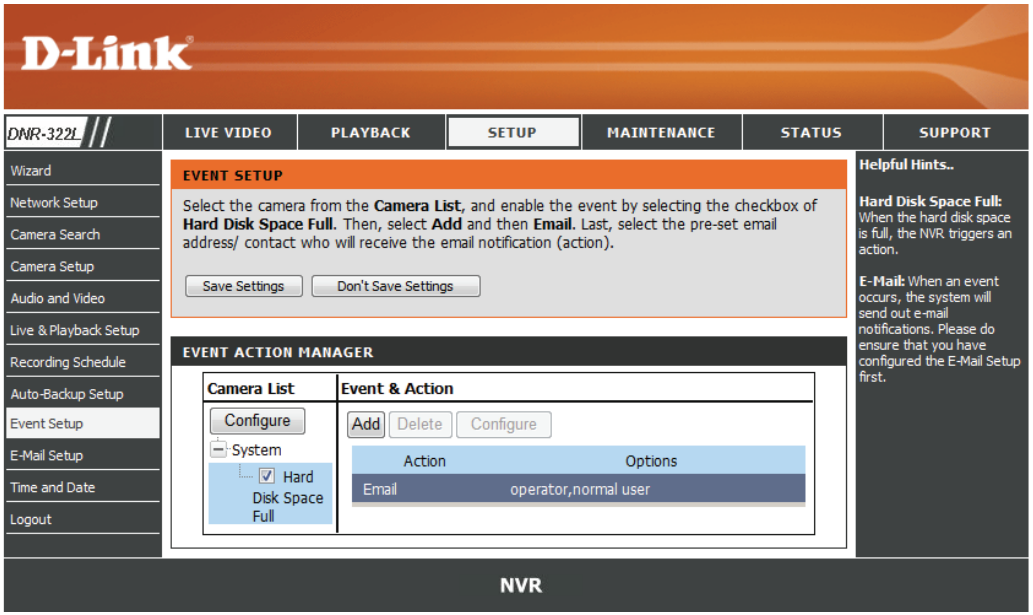
Hard Disk Space Full: When the Overwrite function is not enabled, NVR will stop recording when HDD full.

Step 2: Click the **Add** button to setup the actions of the event.

E-mail: If the event occurs, the system will send an E-mail to the pre-set contacts.

Step 3: Click the action, and then click the **Configure** button to modify the details of that action if necessary.

Step 4: Repeat step 2 through 3 to add more actions.



Auto Backup

This feature enables you to automatically backup the recorded video of the previous date to FTP site. There are two steps to enable the function, one is setup Backup Schedule and another is setup Backup Server.

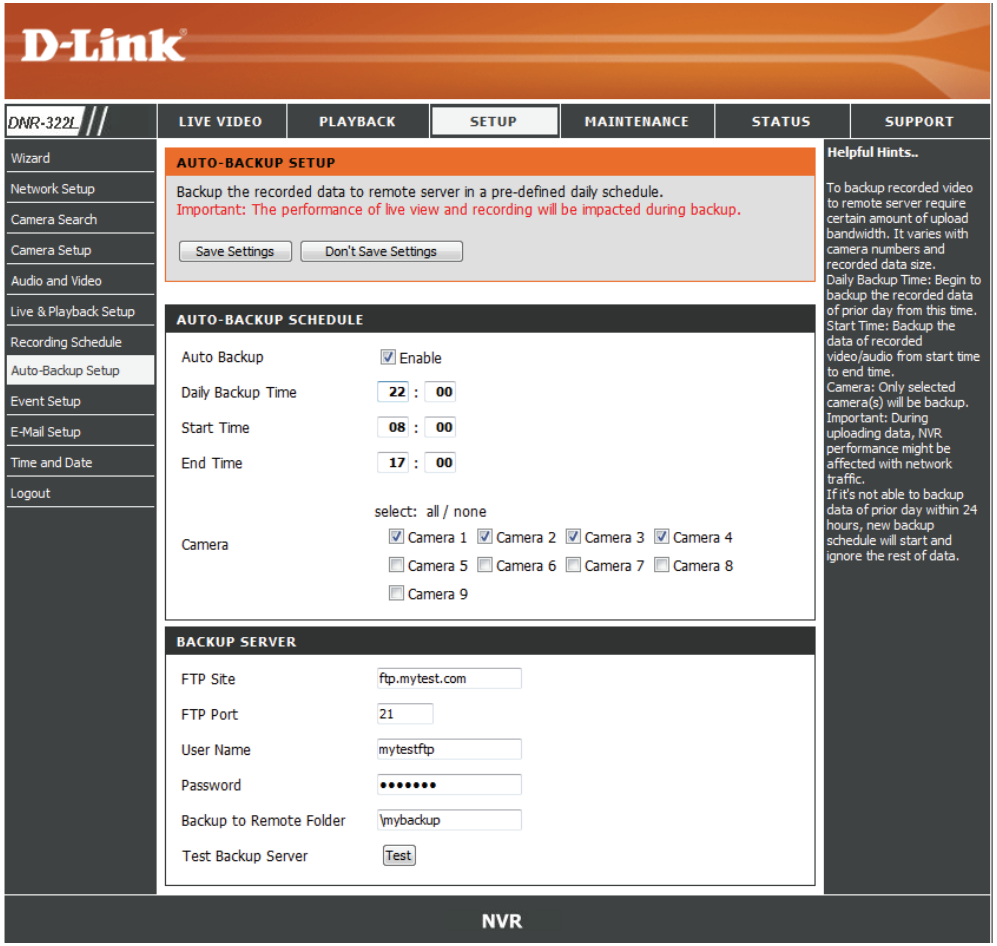
Auto Backup: Check the Enable option to enable this function.

Daily Backup Time: The daily scheduled time to start backup process.

Start Time: The start time of recorded video of the previous date.

End Time: The end time of recorded video of the previous date.

Camera: Select the channel(s) to backup.



Note:
The system backups recorded video files one by one. If the connection between the unit and FTP server is normal, but some problems of FTP causes the system unable to write files on FTP, the system would try each file three times before starting to backup the next file. If the connection is lost, the system would wait for the connection, so no file would be skipped.

Backup Server

FTP Site: The IP or domain name of remote FTP server.

FTP Port: The remote FTP site port number, default FTP port is 21.

User Name: The user name to login FTP server.

Password: The password to login FTP server.

Folder: The folder format is "FolderName", "FolderName/SubFolderName", and so on.

Test Backup Server: After setting up all the information, click the Test FTP button and the system will create a folder to FTP. Please check it after testing.

E-mail Setup

Server Address: SMTP (Simple Mail Transport Protocol) server IP address.

Port: Specify the port number of email server. default number is 25.

Use SSL: Check this if your email server use SSL protocol.

Sender: Sender information.

Subject: The E-mail content.

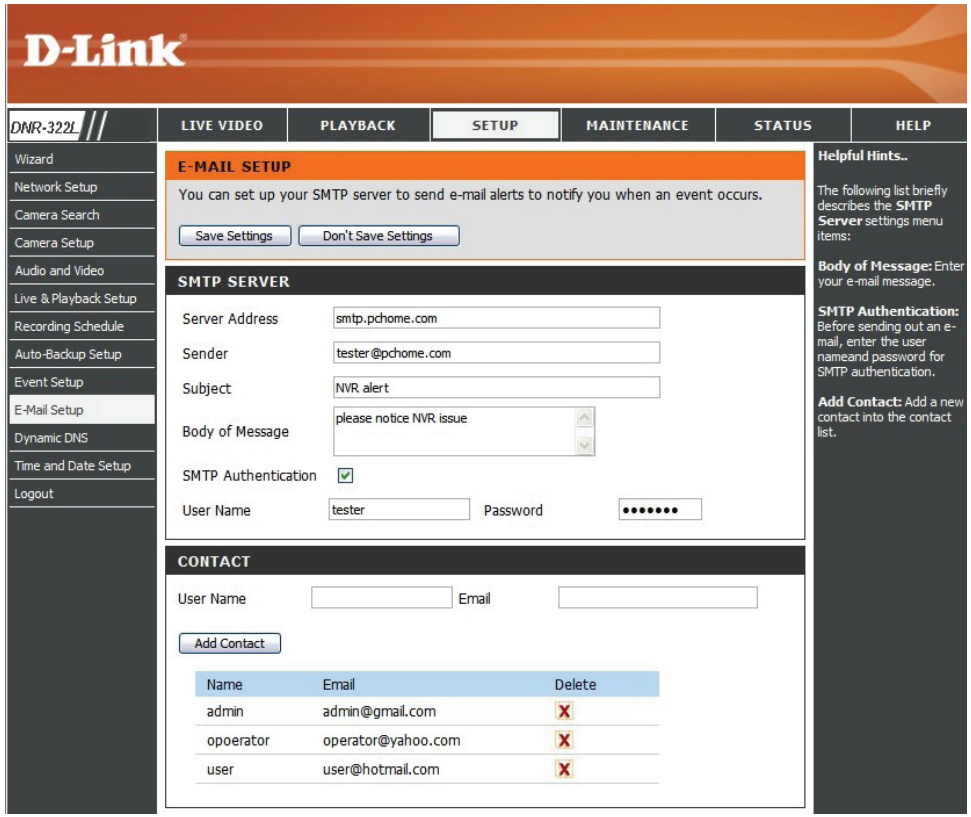
Body of Message: The E-mail content.

SMTP Authentication: Provide the user name and password to the SMTP server for identification before sending E-mail.

User Name: Input the SMTP server login user name.

Password: Input the SMTP server login user password.

Send Testing Mail: Click this button and the system will send a test mail to the sender. Please check it after testing.



Add Contacts

Step 1: Insert the name of a new contact.

Step 2: Insert the E-mail address of this new contact.

Step 3: Click the **Add Contact** button.

Step 4: Click the **Save Settings** button to save the new contact list.

Time and Date Setup

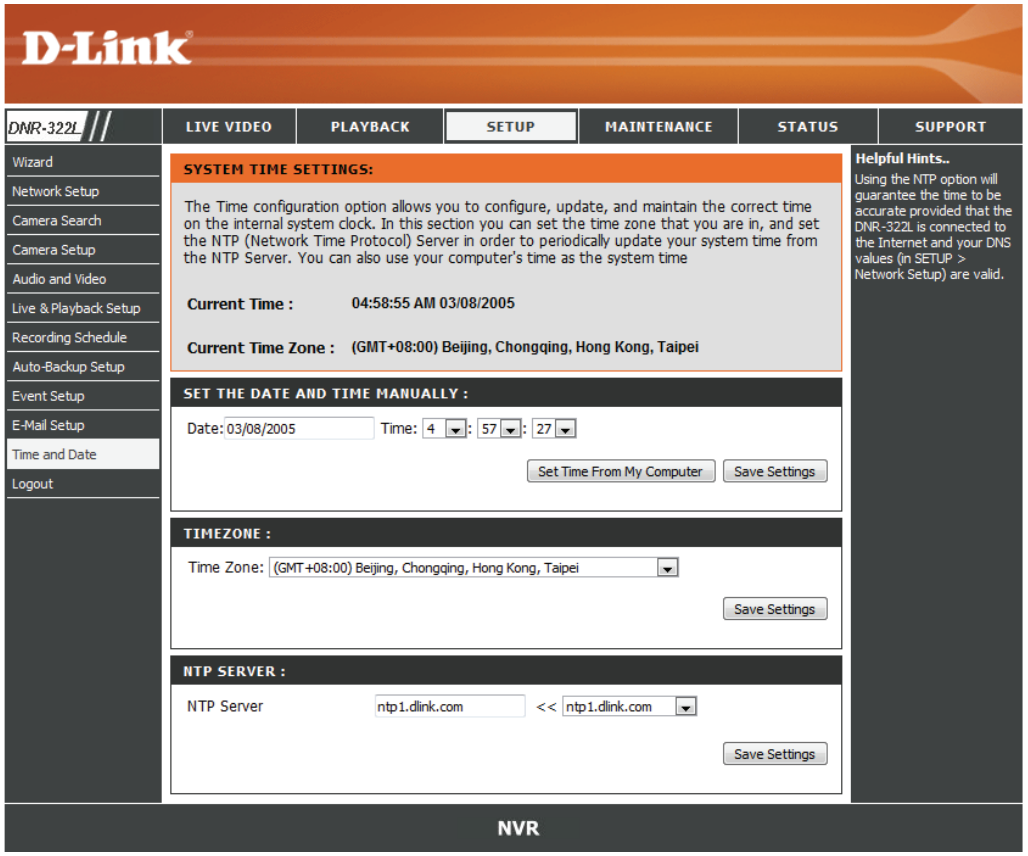
Manually Set the Time and Date: Enter the complete time and date settings manually. Click **Save Settings** to apply the settings.

Set Time From My Computer: Click **Set Time** to have the NVR set its own clock according to the time on your computer.

Time Zone Settings: Select your time zone from the pull-down list. Click **Save Settings** to apply the settings.

There are three choices for setting the time.

NTP Server: Select or enter an **NTP Server** here. An **NTP Server** is a server on the Internet that maintains time. The NVR will contact the server you entered and receive the correct time. Click **Save Settings** after entering an **NTP Server**.



Maintenance

User Management

Add New User

Step 1: Input the new user name.

Step 2: Input the password. Type the password again to confirm.

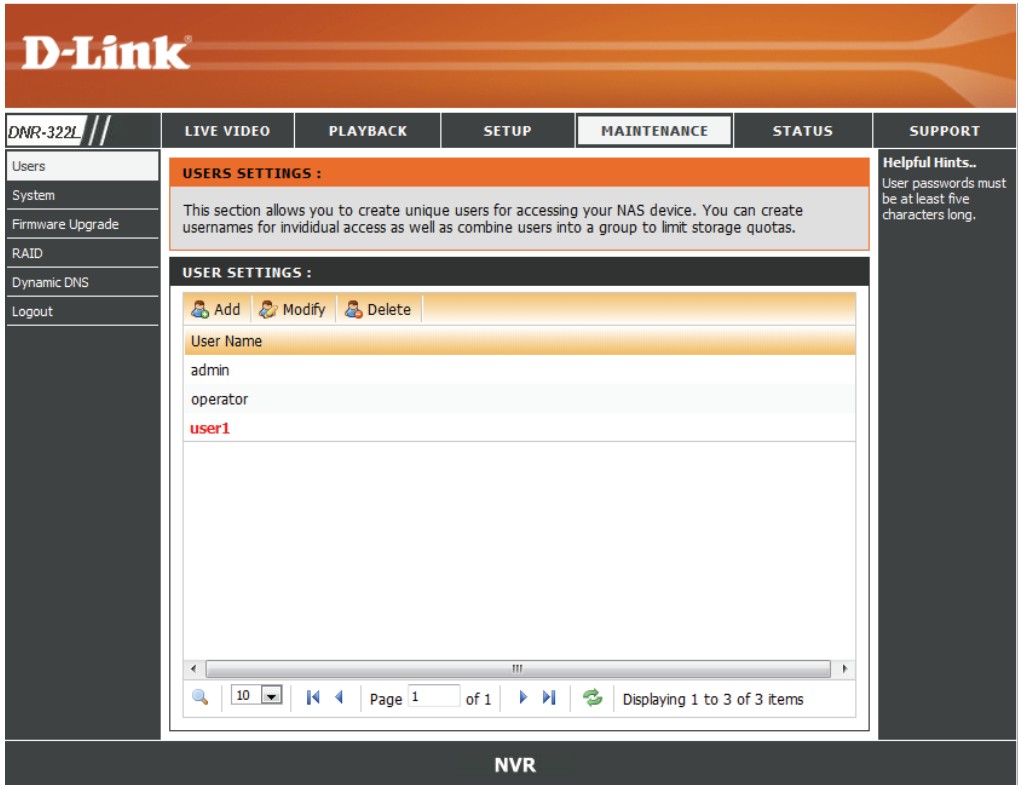
Step 3: Select the live view cameras and **PTZ/ IO Control** functions which this user can access.

Step 4: Select the playback channels and **Backup Data** function which this user can access.

Step 5: Click the **Finish** button to create a new user.

Note

The Administrator account can configure all functions of the NVR. This account cannot be deleted. The default password for "admin" is blank. Setting a password after the first login is strongly recommended. If the administrator password is lost, you may hold the reset button on the rear panel of the device to reset the NVR to factory defaults. Note: This will erase all the previously-saved settings.



User List

Change User's Password

Step 1: Select the user name you want to modify and click **Modify** button.

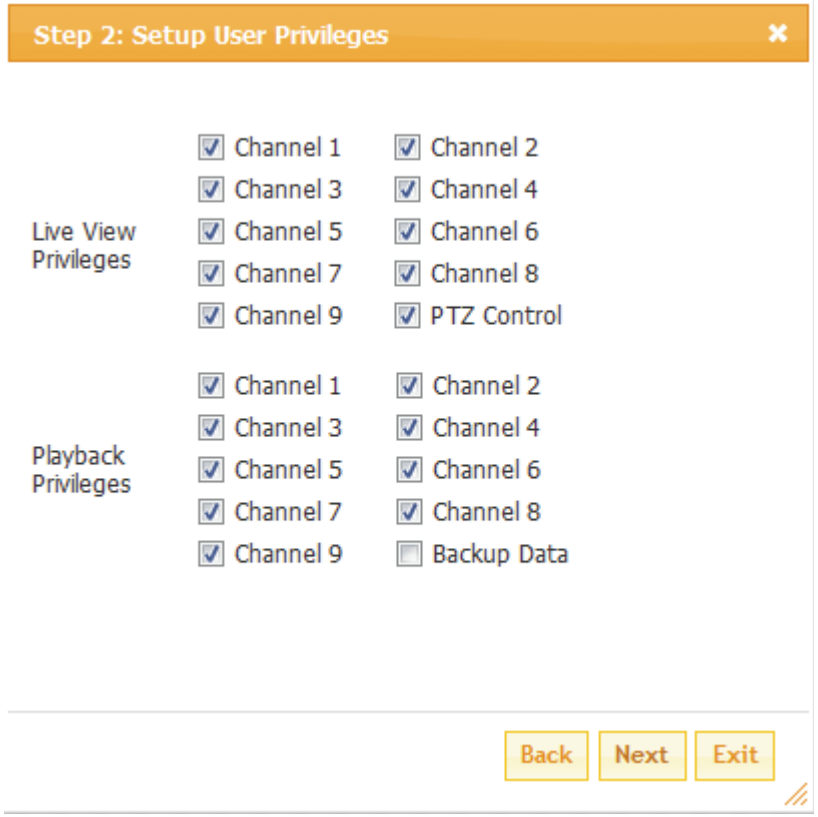
Step 2: Input the password of the user. Type the password again to confirm.

Step 3: Click the **Finish** button to save. Click **Exit** to abort.

Delete A User

Step 1: Select the user name you want to delete and click **Delete** button.

Step 2: In the confirmation box, click the **OK** button.



System

Users can save the NVR configuration to a file and restore it when necessary. Ocassionally, restarting the NVR can keep the system running smoothly. Reset the NVR to restore all configurations to factory default.

Restart: If the NVR is malfunctioning or crashes unexpectedly, click the **Restart** button on the NVR. Restarting the NVR will take about one and a half minutes.

Default: This will reset all configurations to factory default.

Shutdown: This will shutdown the NVR.

Save Configuration: All the configurations can be saved as a file to the specified location. Click the **Save** button to save the file.

Load Configuration File: User can restore the configuration file after reset to factory default file. Click the **Browse** button to select the configuration file and restore it by clicking the **Load** button.

Idle Time: When adminstrator enter all the Setup pages, except the Live Video and Playback Page, NVR will count the idle time when user doesn't has any movement. it will force logout user and request to login again for security concern. Change the period of idle time here.

RAID

NVR will show the information of installed HDD first. Click Next to select new RAID configuration.

Choose from four different hard drive configurations in this section. Begin by clicking the **Set RAID Type and Re-Format** button. Note: All data will be lost during this process.

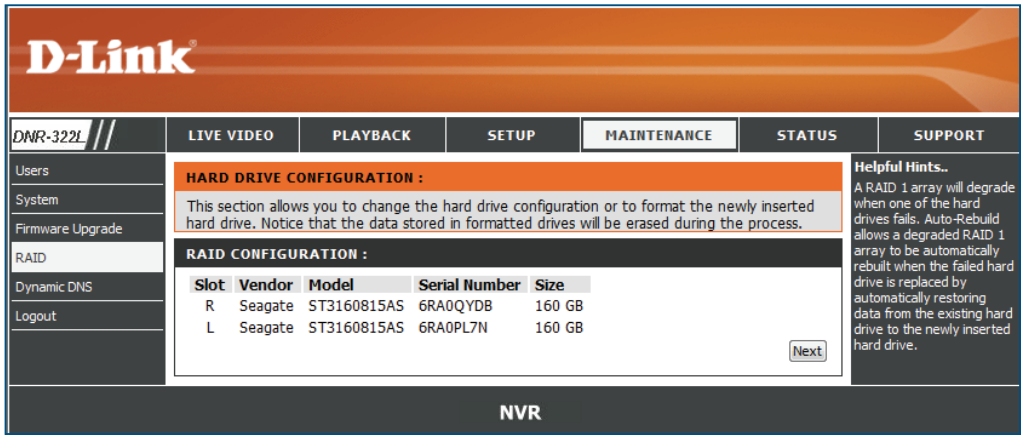
Standard: Creates two separate volumes (or one volume if only one hard drive is present). Each hard drive has its own volume.

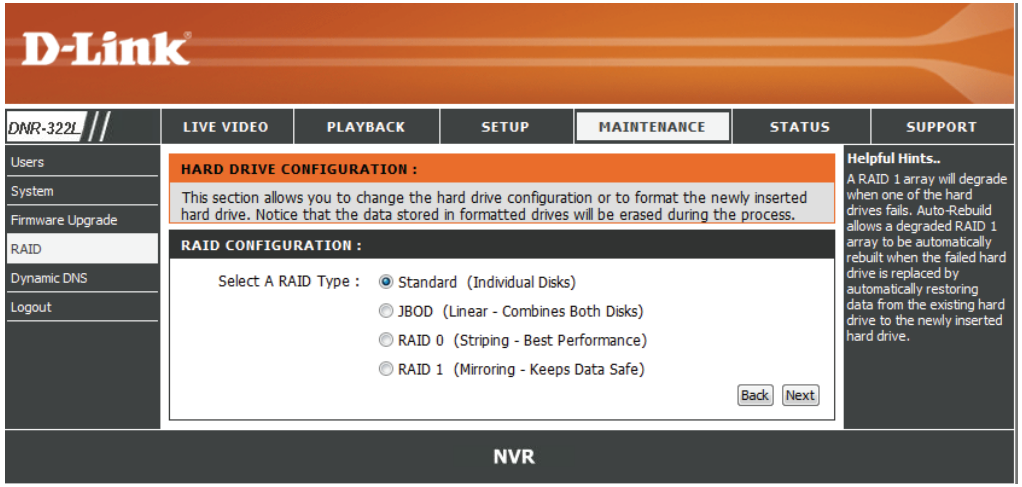
Note:
Only Standard mode can create the Volume2, which is available as a File (Samba) Server. Use the NVR Search utility can mount the File server to your Windows system.

JBOD: Combines both hard drives in a linear fashion which will create one large volume geared towards maximum available space.

RAID 0: Combines both hard drives in a striped fashion which will create one large volume geared towards maximum performance.

RAID 1: Mirrors the hard drives for redundancy. If one hard drive fails, the other still has all of the data. Replace the failed hard drive and it will re-mirror, restoring maximum data protection.



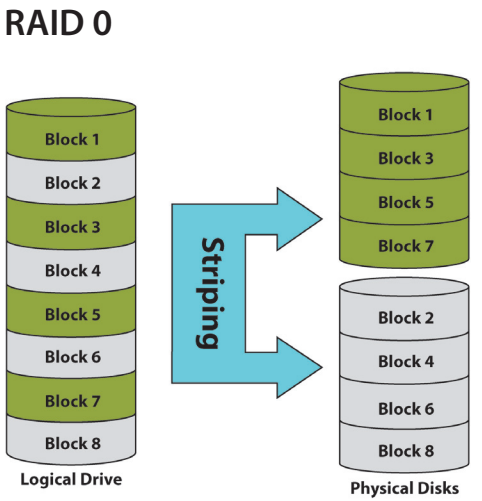


What is RAID?

RAID, short for Redundant Array of Independent Disks, is a combination of two or more disks with the aim of providing fault tolerance and improving performance. There are several different levels of RAID, with each providing a different method of sharing or distributing data amongst the drives. The NVR supports RAID levels 0 and 1.

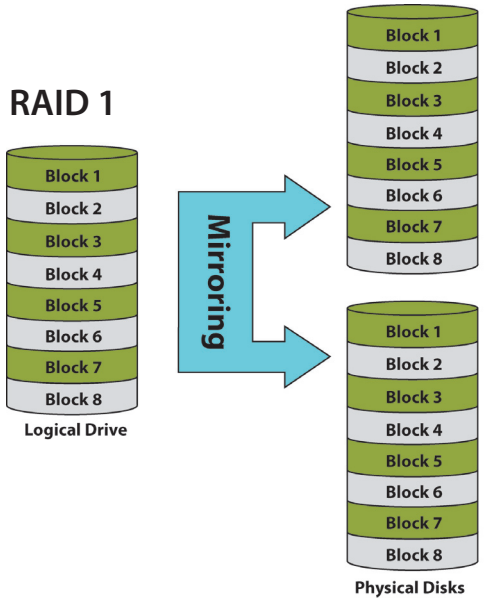
RAID 0 RAID 0 provides data striping, which spreads out blocks of data over both drives, but does not provide data redundancy.

Although performance is improved, the lack of fault tolerance means that if one drive fails, all data in the array will be lost.



RAID 1 RAID 1 provides mirroring over both disks, with the same read/write speed of a single disk. A RAID 1 array can only be as large as its smallest member disk.

Because the data is stored on both disks, RAID 1 provides fault tolerance and protection, in addition to performance advantages.



Dynamic DNS

Enable this option only if you have purchased a domain name and registered with a dynamic DNS service provider. The following parameters are displayed when the option is enabled.

Server Address: Select a dynamic DNS service provider from the pull-down list.

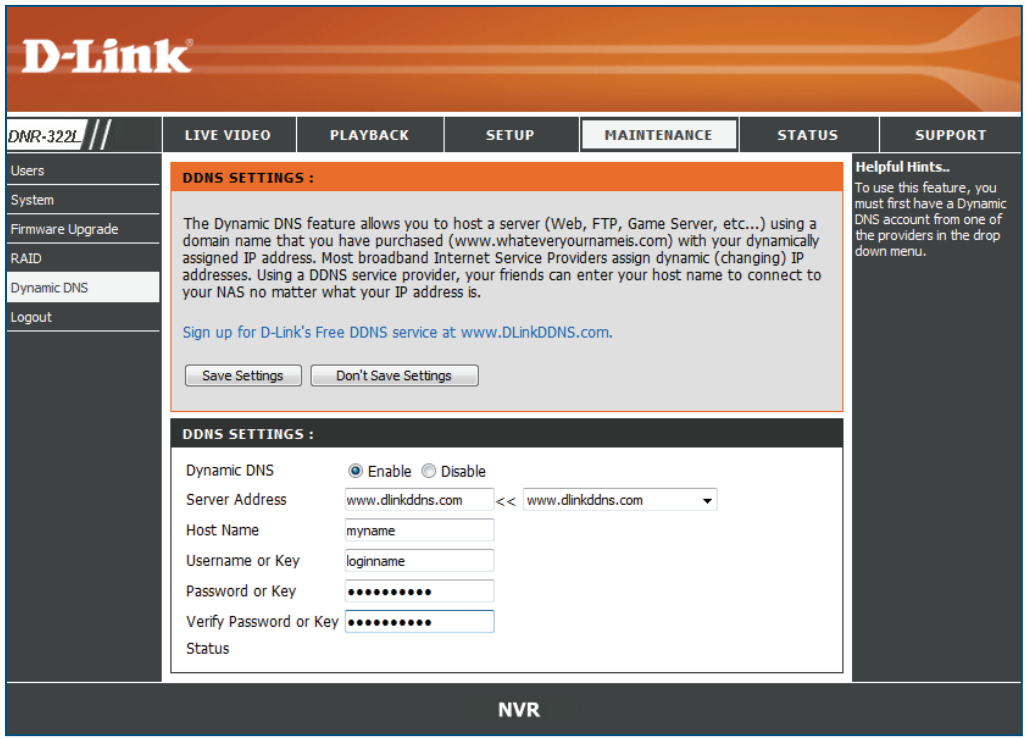
Host Name: Enter your host name. For example: myhost.mydomain.net.

Username or Key: Enter the username or key provided by your service provider. If the Dynamic DNS provider supplies only a key, enter that key in all three fields.

Password or Key: Enter the password or key provided by your service provider.

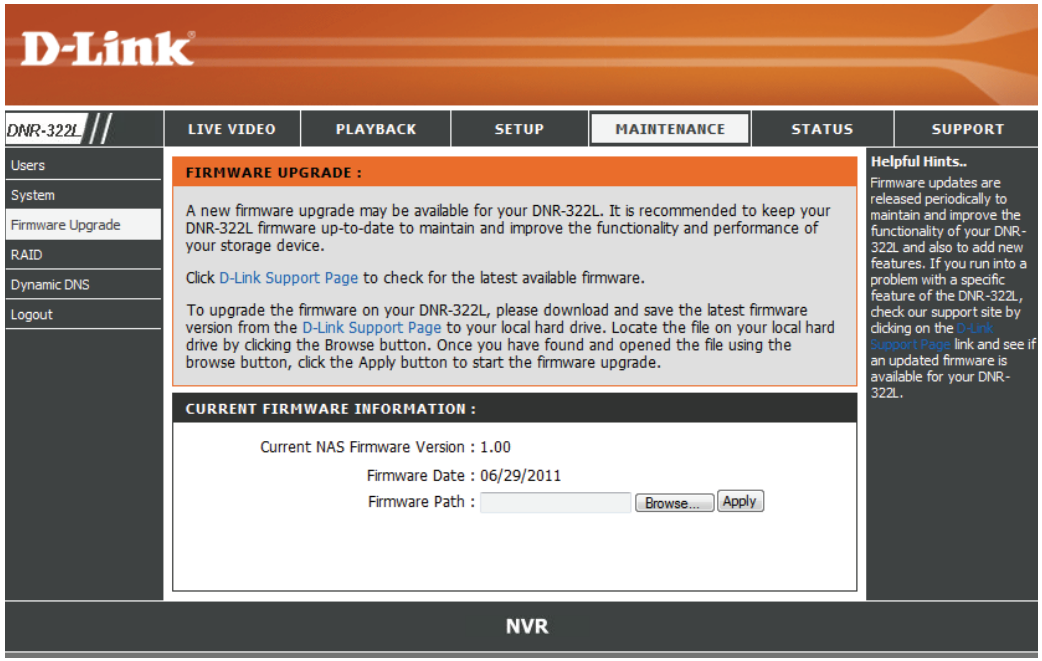
Verify Password or Key: Re-type the password or key provided by your service provider.

Status: Displays the current status of connection to the DDNS server.



Firmware Update

The device firmware can be upgraded from this page. The firmware update must be saved on the local hard drive of your computer. Click the **Browse** button to search the local hard drive for the firmware update file. Click **Apply** to upgrade. You may always check for firmware updates on the D-Link Support Page.



Status

Camera Status

This page displays the connection and recording status of your cameras.

Connection Status: Shows the camera connection status. The user can click **Connect** or **Disconnect** to change the connection status.

Recording Status: Shows the recording schedule and current recording status of the cameras. Please note that if the camera is disconnected, the recording may continue but will produce blank video.

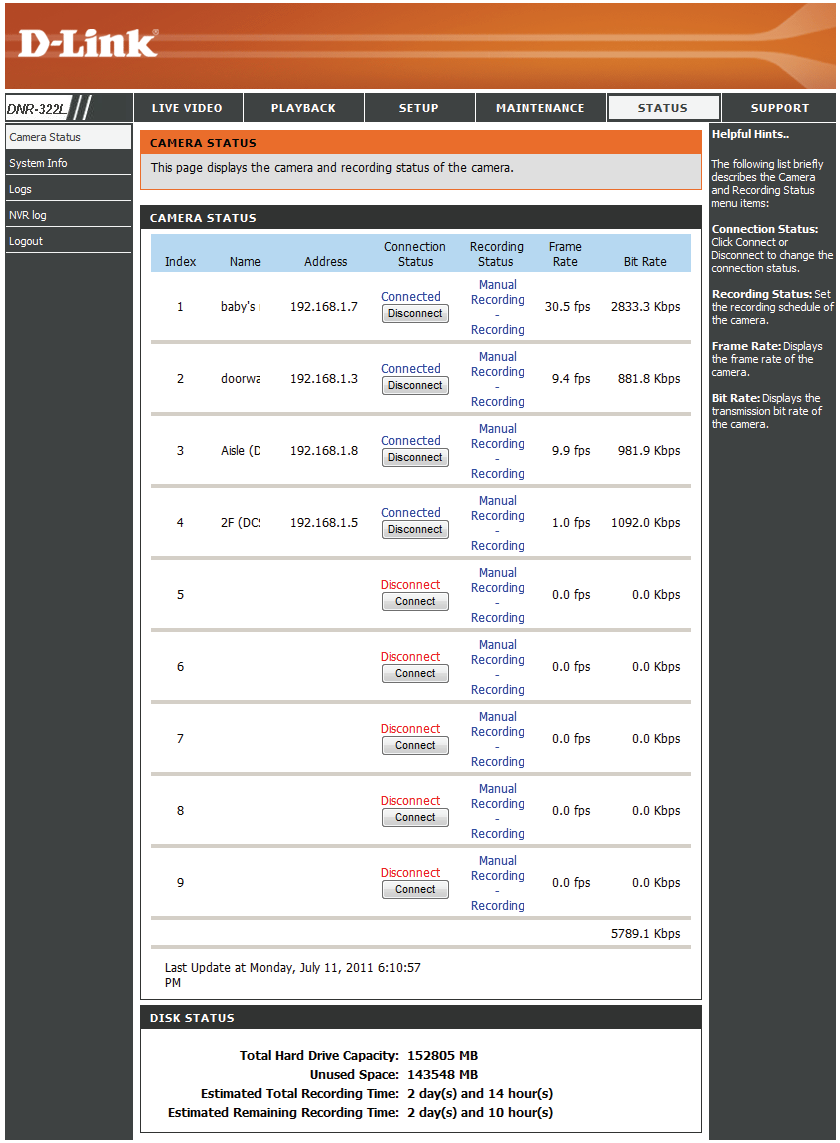
Frame Rate: Displays the frame rate of the camera.

Bit Rate: Displays the transmission bit rate of the camera.

Note: If the Frame Rate or Bit Rate is too low, please check the your network configuration between cameras and NVR. If the bit rate is too high, it will cause the Live Video display slow or lag, please modify the quality or bitrate setting in the camera web GUI accordingly.

Disk Status: Shows the hard drive space and estimated remaining recording time status.

Note: The recording time information is estimated by current bit rate. This may change each time a user refreshes this page.



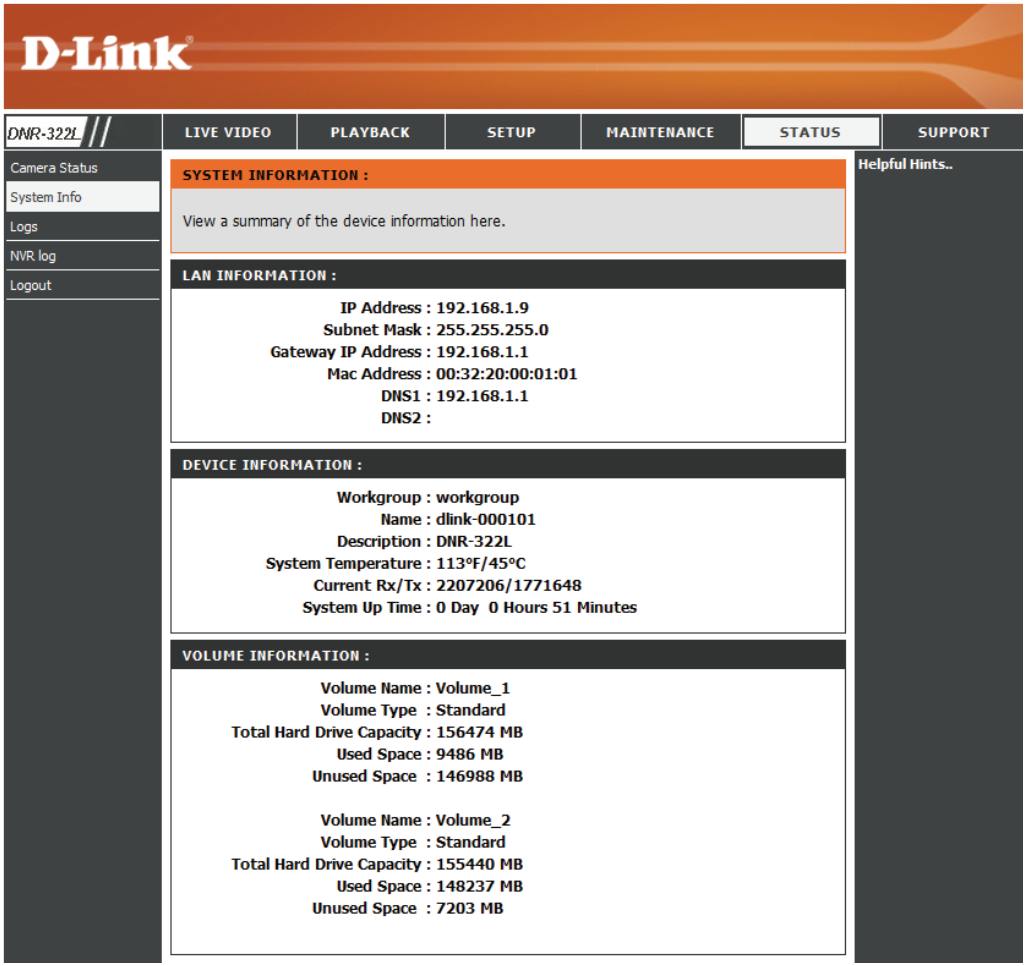
System Info

This section displays the summary information of your NVR.

LAN Information: Displays the local network settings of the NVR.

Device Information: Displays the device name and current temperature of the NVR.

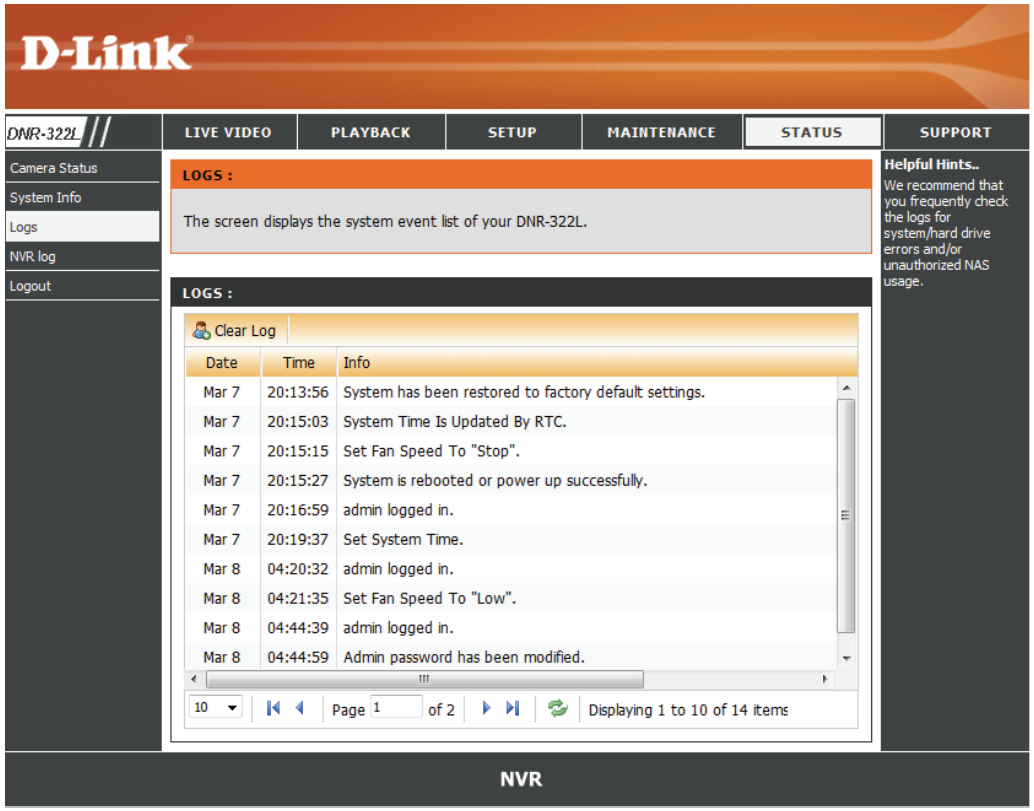
Hard Drive Information: Displays the hard drive information, including the disk mode, total size, used and remaining drive space.



System Log

This page displays the system event list of your NVR. The **System Log** is different from the **NVR Log** as it includes the following items:

1. User login/logout
2. Modify/delete account
3. System restart
4. System reset to default
5. System firmware update

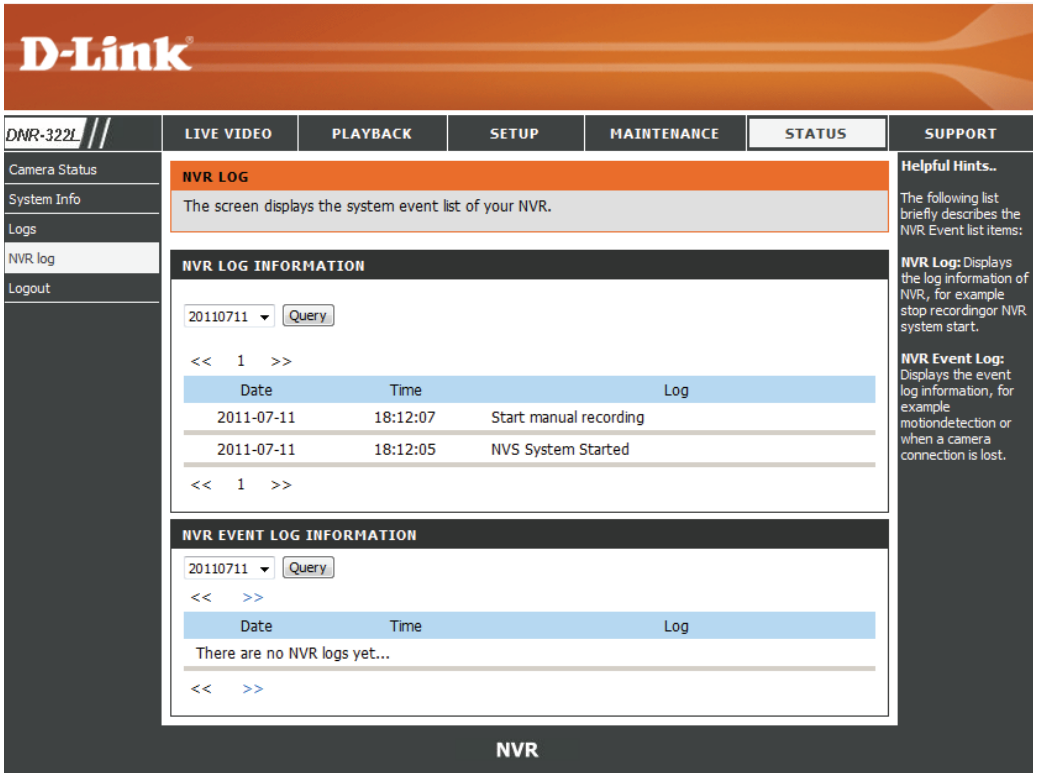


NVR Log

This NVR Log displays the event log information.

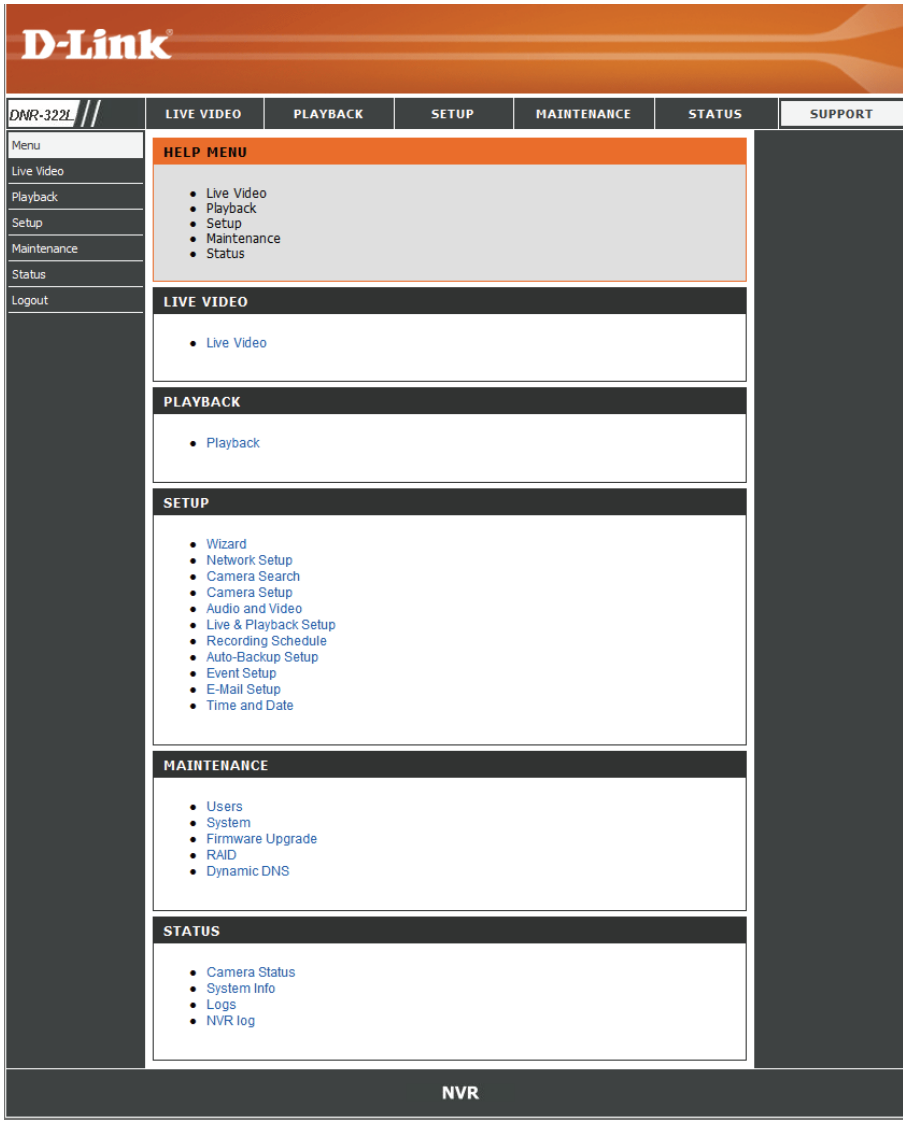
NVR Log: Displays the NVR log information such as stop recording or NVR system start.

NVR Event Log: Displays the event log information such as motion detection or lost camera connection.



Support

The NVR Help page provides a list of support topics.



Live Video

This section will enable you to configure and view the live video from your network cameras.

Setup Live View

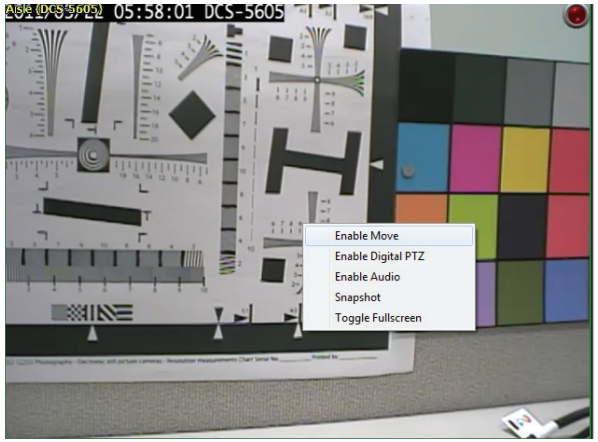
Step 1: Click the **LIVE VIDEO** button at the top of the menu.

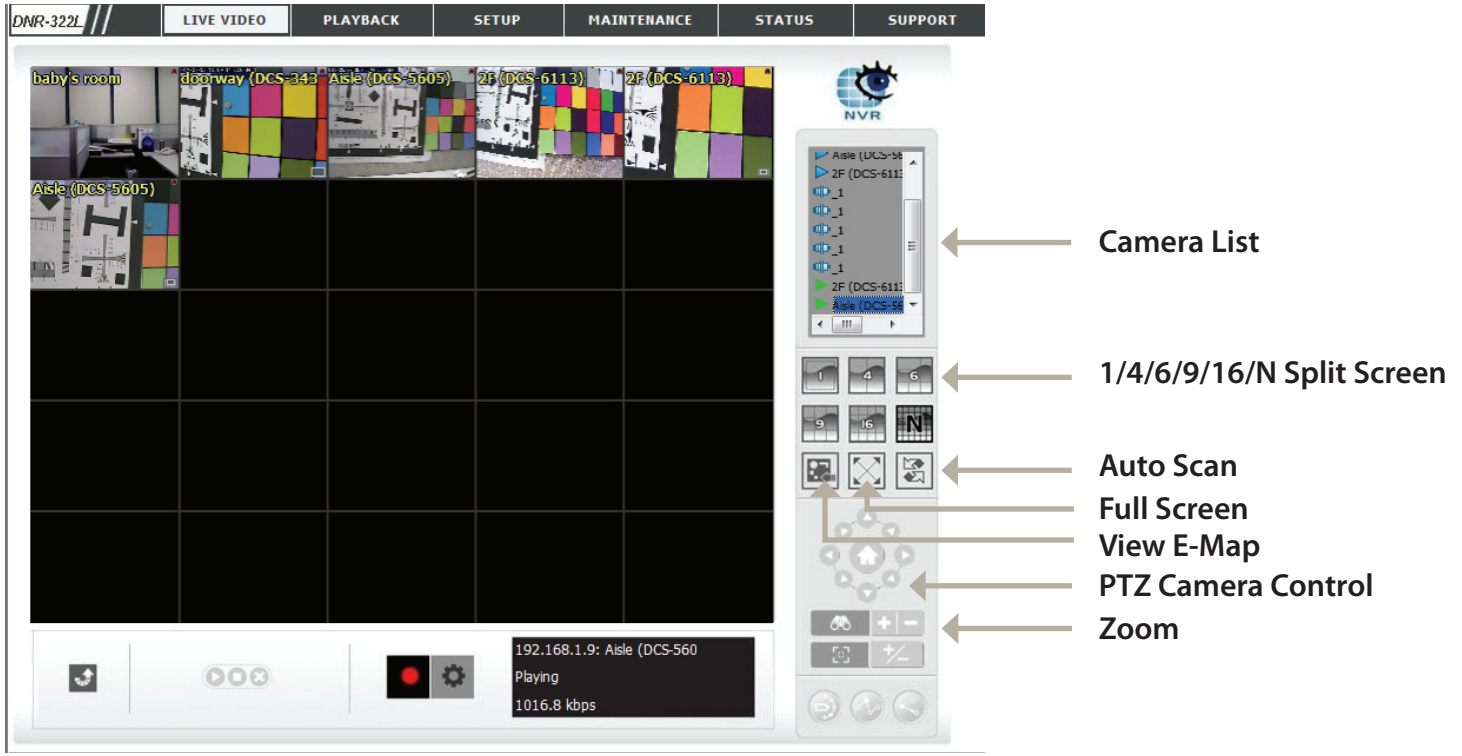
Step 2: Select a camera(s) from the camera list on the right and then drag it to the location to where you wish the image to be displayed.

Step 3: Users can change the video display position by drag it to another position.

Note

1. The selected video will be marked with a green line.
2. Enable Digital PTZ: Right click on the video and enable xClick the + or – button to zoom in or zoom out the view. The lower right square flashing on the video grid indicates the correspondent view of the camera.
3. If the camera supports PTZ, users can control the selected camera from the PTZ panel. Users can also right click on the video and check ***Enable Move*** to control the PTZ function directly. Please note that when ***Enable Move*** is checked, the video will be marked with a red outline. This indicates that another camera cannot be adjusted until the PTZ function has been deactivated.
4. If the camera supports audio, users can check ***Enable Audio*** from the right click menu and listen to live audio of this channel.
5. Snapshot: Right click on the video and select the snapshot function to capture a specific video image immediately.
6. Right clicking on the video will show the option to ***Toggle to Full Screen***. Press the ESC button on the keyboard to return to normal display.





1/4/6/9/16/N Split Screen: User can choose to view 1/4/6/9/16 or NxN cameras at a time.

Note: Maximum physical cameras only supports 9 channels, other channels are the "Duplicated channel".

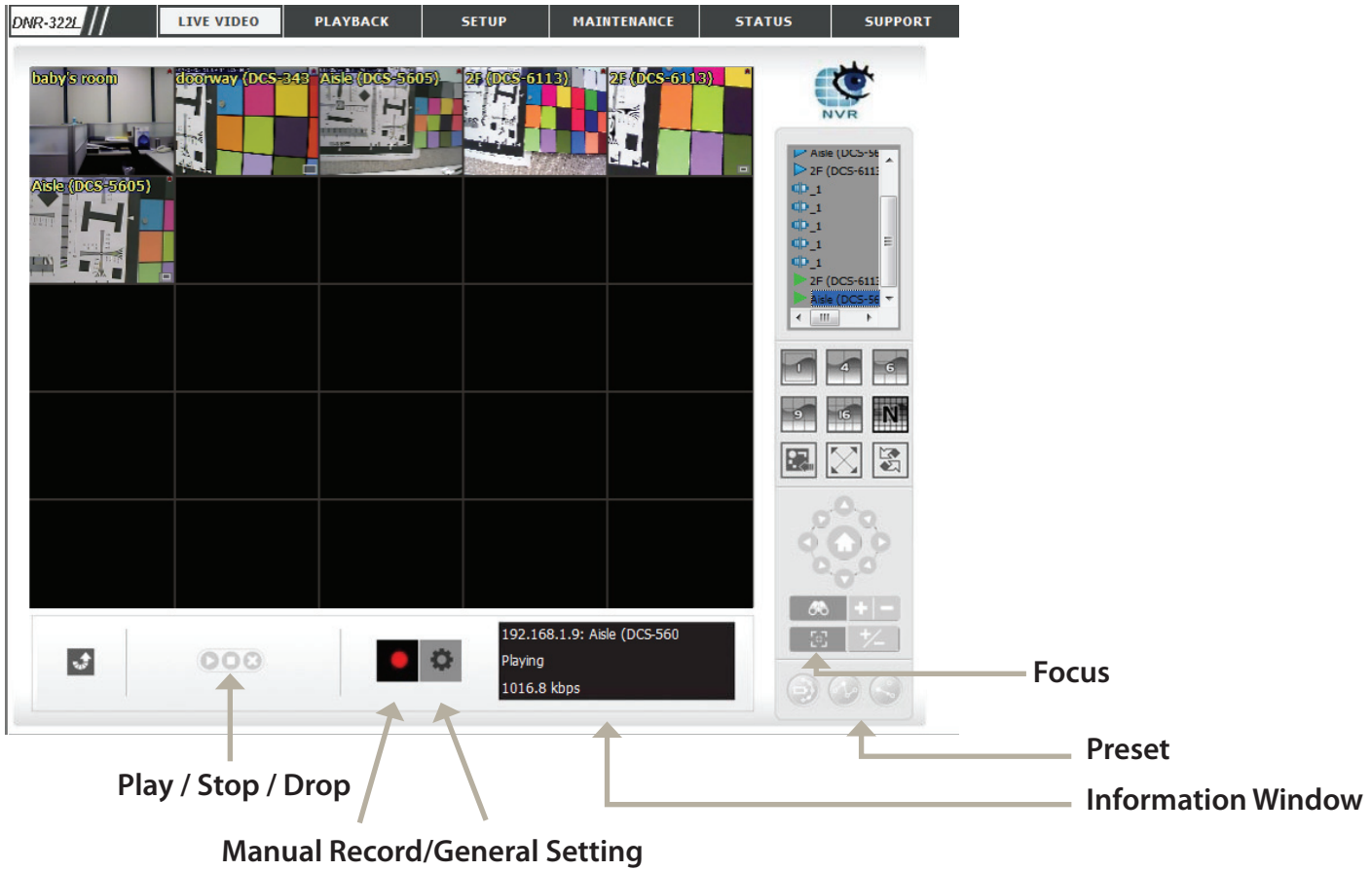
View E-Map: Display your emap file. Max. size 20KBytes of BMP and JPG file

Auto Scan: Activate auto scan to rotate the channels on the display screen. For instance, you may select to show only 4-split screen on the liveview, while connecting 16 channels to the system. With auto scan function, you are able to see all 16 channels by turns.

Full Screen: Select to display the video with full screen. Press **ESC** button on the keyboard to return to normal display.

PTZ Camera Control: You may control the camera view by utilizing the PTZ camera control panel to adjust the camera's view. This is only available with cameras that support the PTZ function.

Zoom: Click the + or - button to zoom in or zoom out. This option is only available with cameras that support the optical zoom function.



Preset: Click the **Set** button to set a preset position for a camera with PTZ support. Users can give the specified position a name and store it in the preset position list. Click the **Go** button to go to the preset position. This is only available with cameras that support the PTZ function.

Focus: Click the +- button to adjust focus or select the auto focus.

Play/Stop/Drop: Select a camera/ video and click this button to play/stop/disconnect a particular channel.

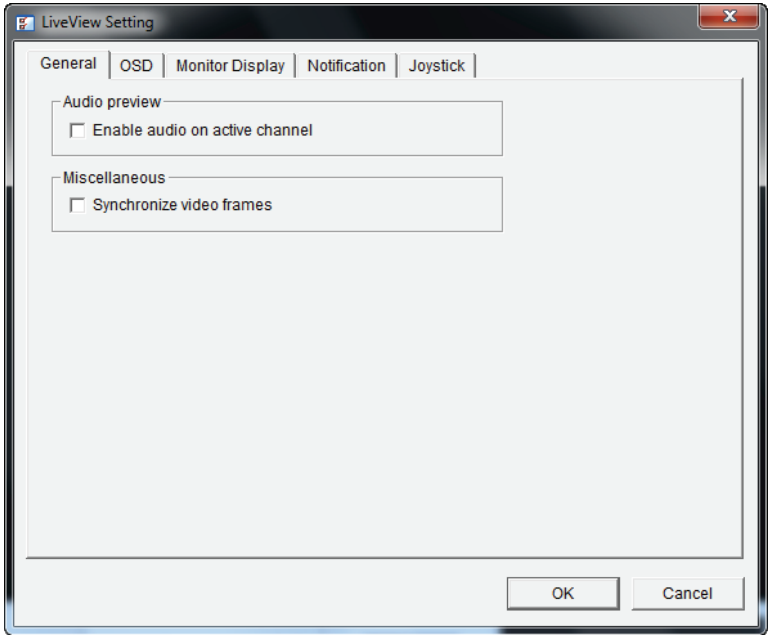
Information Display Window: Display video information including camera name, video status, and bit rate for a selected channel.

Manual Record: Click to start recording immediately. Click again to stop recording.

General Setting

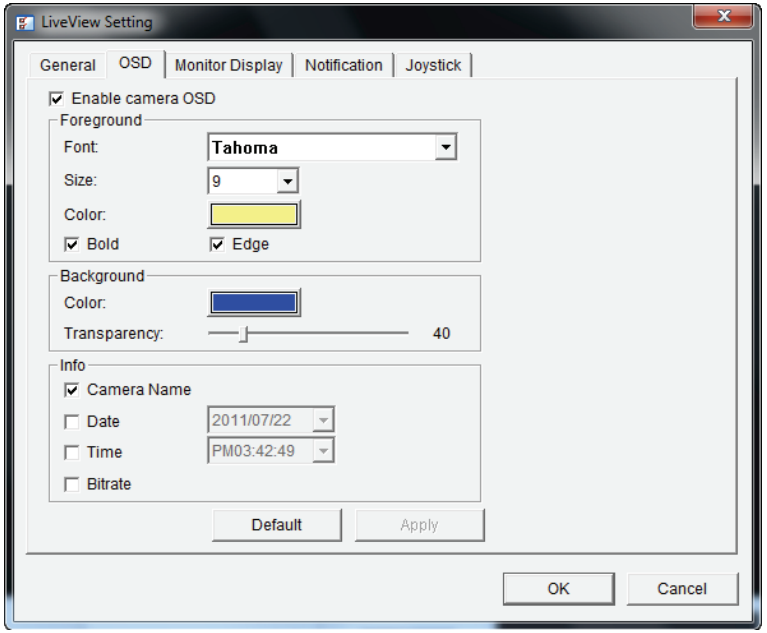
General

1. Check the Enable audio on active channel option to enable audio streaming on active channel. This function synchronizes with right click on camera to enable audio.
2. Check Synchronize video frames to avoid the tearing problem occurring in video display while increasing the CPU loading.



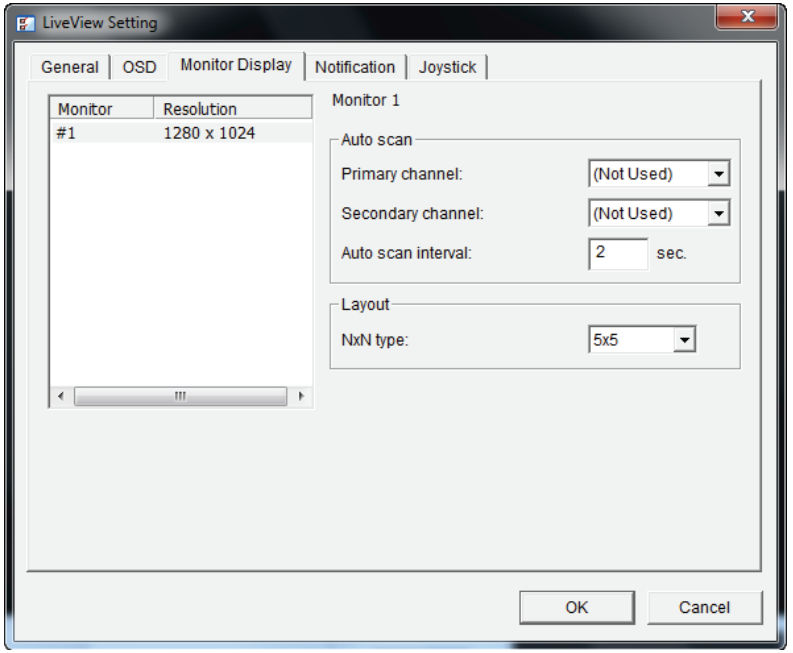
OSD (On-screen display) Setting

1. Check the Enable camera OSD option.
2. Set the foreground and background settings of the OSD.
3. Select which kinds of information will be displayed on the screen.
4. Click the Apply button to preview the result.
5. Click the Default button to back to the default settings if necessary.



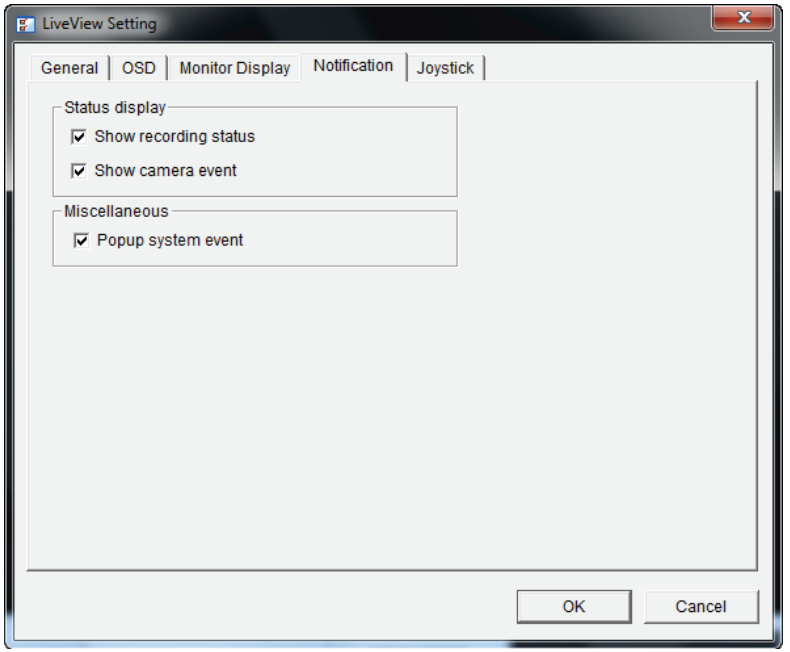
Monitor Display Setting

1. Select Primary channel which will always be on the screen when activating auto scan; while select Secondary channel which has second priority when activating auto scan. Enter the time interval for auto scan.
2. Select the screen division of NxN type.



Notification

1. Check Show recording status to show the crystal ball with recording status on monitor display.
2. Check Show camera event to display the words of detected camera event on the correspondent screen.
3. Check Popup system event to pop up system event message dialog as a warning when a system event occurred.



Set up Joystick Control

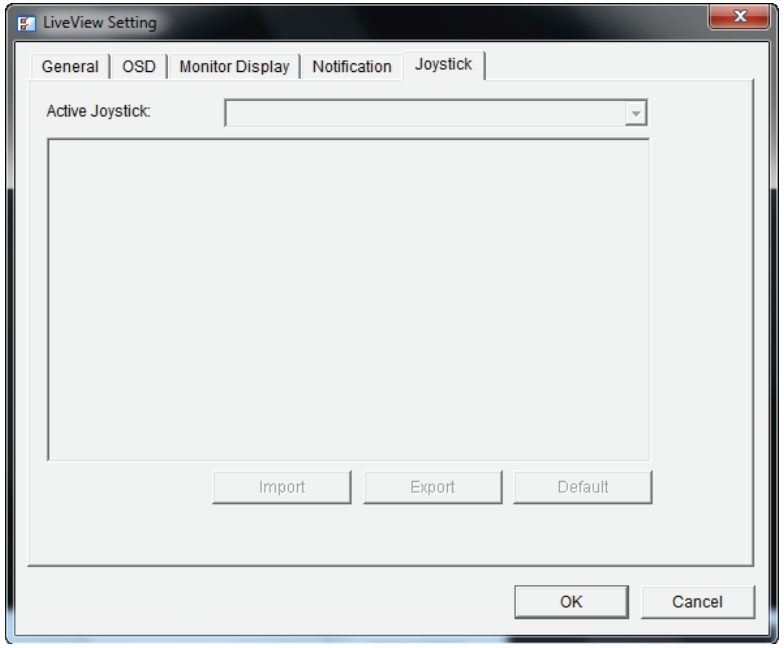
Function: You can choose the function from the drop-down menu for the button of the joystick.

Parameter: Choose the preset point from the drop-down menu.

Default: Click to back to default setting.

Import: Click to import the settings.

Export: Click to export the settings.



Multiple view

You can right click on camera list to duplicate and connect/ disconnect designate cameras, and do other functions.

Duplicate Camera: Select the duplicate camera function to create multiple views. The duplicated camera will be shown with green indicator. Combine this function with digital PTZ, users are allowed to enlarge different spots and view them in different channels meanwhile record the whole view.

Connect / Disconnect: Click to connect or disconnect the designate camera.

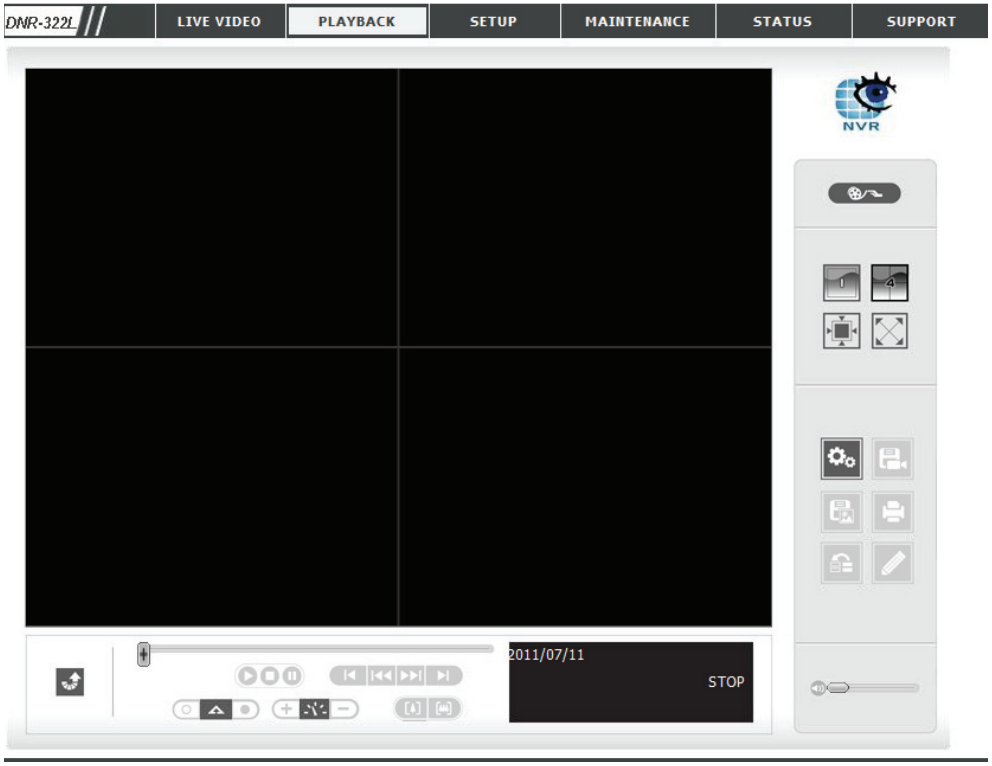
Connect All / Disconnect All: Click to connect or disconnect all cameras.

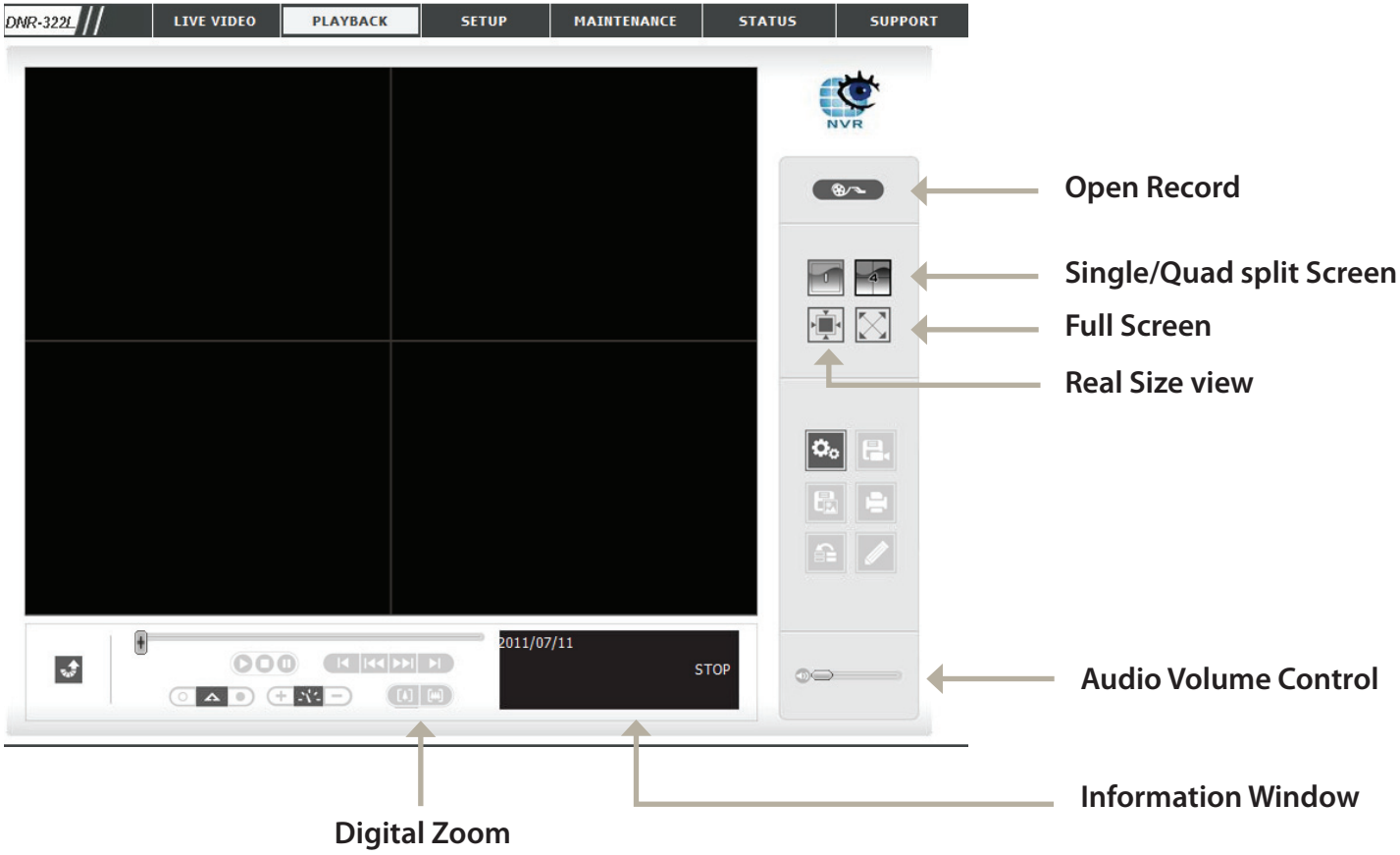
Playback

This feature allows you to search and playback the recorded video.

Play the Recorded Video

Step 1: Be sure that you have set the schedule/recording event first.
Step 2: Click the **PLAYBACK** tab at the top of the menu.
Step 3: Click the **Open Record** button.
Step 4: The **Record Display Window** will show information about the available video clips. Select the date you would like to find the video records.
Step 5: Highlight the video records that you would like to review.
Step 6: Click the **OK** button.





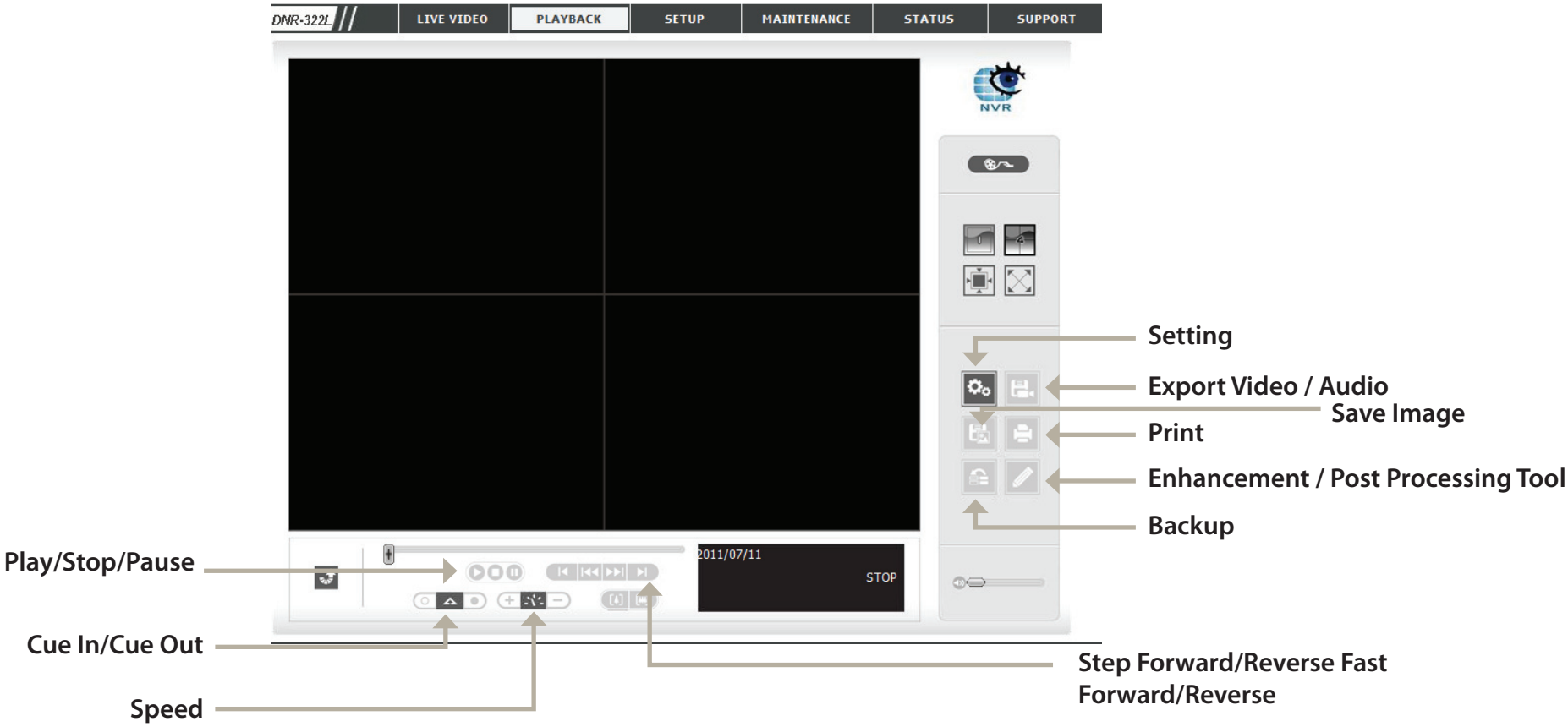
Single/Quad split Screen: User may view a single camera or 4 cameras at a time. The **DNR-322L** only supports 1 camera playback.

Full Screen: Select to display the video with full screen. Press the **ESC** key on the keyboard to return to normal display.

Information Window: Display video date and time, cue in/ out points, time and speed.

Audio Volume Control : Adjust the sound level.

Digital Zoom: Click the icon to digitally zoom in or out. Every camera can use this function.



Play/Stop/Pause: Select a camera/ video and click this button to play/stop/pause a particular channel.

Speed: Click the + or - button to increase or decrease the playback speed.

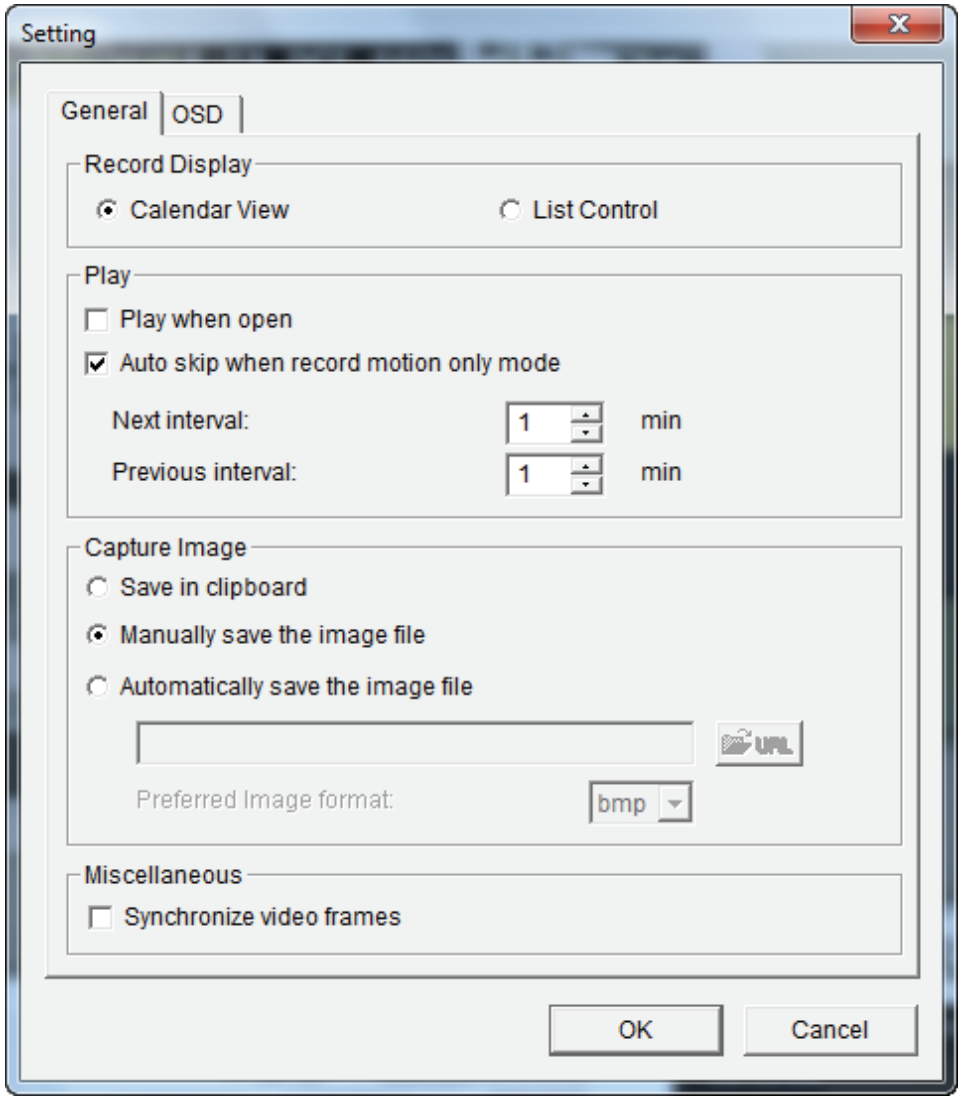
Cue In/Cue out: Click the **Cue In** or **Cue Out** button to set the period for Save Video.

Step Forward/Reverse: Click to pause the playback and move to next frame or last frame.

Fast Forward/Reverse: Click to pause the playback and move to next minute or last minute.

Open Record and Setting

Click the **Setting** button to change the settings of Playback.



Record Display

Calendar View: Recordings are displayed as a calendar.

List Control: Recordings are displayed as a list.

Play

Play when open: When selecting this option, the system will start playing the video clip whenever a record is withdrawn.

Auto skip when record motion only mode: Check the option to set up the system to automatically skip to the points where motion is recorded.

Next Interval: Set the interval for the video to go forward when you click the **Forward** button on the control panel.

Previous Interval: Set the interval for the video to go back when you click the **Reverse** button on the control panel.

Capture Image

Save in Clipboard: The image will be saved in the clipboard and can be pasted to other applications.

Manually save the image file: You can manually select where you would like to save the image, name the saved file, and choose the desired format for the image.

Automatically save the image file: By pre-setting a path/URL and the image format, the system will autmatically save the image accordingly when you click the **Save Image** button in the control panel.

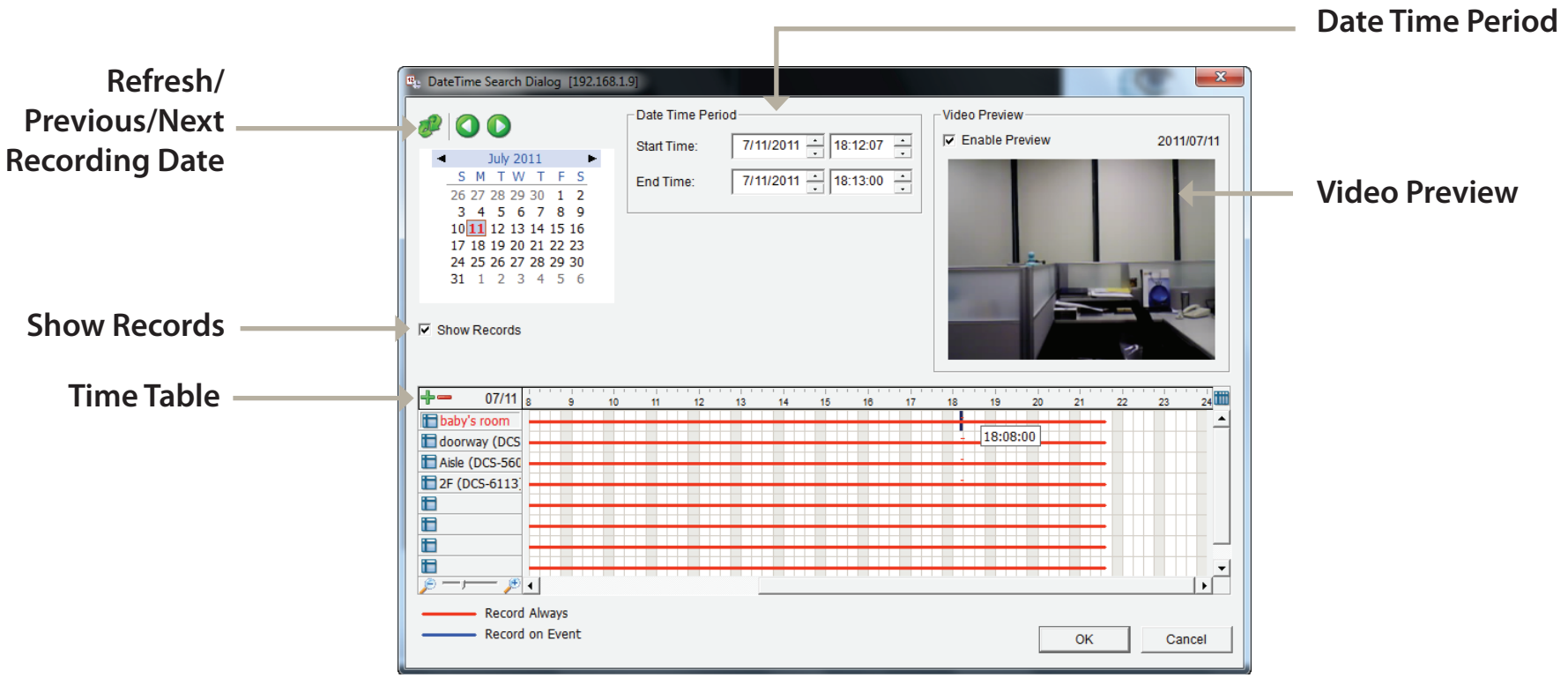
Miscellaneous

Check Synchronize video frames to avoid the tearing problem occurring in video display while increasing the CPU loading.

Search the Recorded Video to Playback

Click the Open Record button to access the Date-Time Panel and select the video records which you would like to review.

Users can refresh the **Date Time Search Dialog Window** or go to the previous or next recording date by pressing the upper left corner buttons.



Record Display Window: Display the available recorded video records.

Date Time Period: Select the start and end points that indicate the time period you would like to view.

Video Preview: Check the **Enable Preview** option to view the selected video.

Time Table (pre-set recording schedule): Click the icon "+" to select all channels, or click the icon **"–"** to deselect all channels. The scale bar can be used to modify the scale of the time table. There are two recording modes: **Record Always** and **Record on Event**. The timetable will display these two modes in different colors.

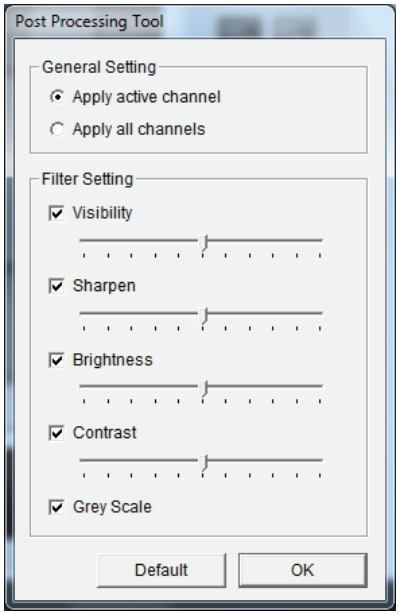
Show Records: Displays the recording data in a timetable.

Step 1: From the **Record Display Window** at the top left of the **Date Time Panel**, select the date you would like to search the record from. The red lines shown on the timetable indicate available recorded video records.
Step 2: Use color bars to differentiate recording types from each other. This will help you select video clips.
Step 3: Highlight the video clip you would like to review by left-clicking and dragging the time period. You may also utilize the **Start Time** and **End Time** in the **Date Time Period Section** after choosing the camera. The scale of the timetable can be modified using the icon at the bottom left corner.
Step 4: Select the **Enable Preview** option to get the preview of the video you select.
Step 5: Click the camera name to select the cameras you would like to play back.
Step 6: Click the **OK** button to begin playback.

Note
The Record Display Window can be shown in (a) calendar view or (b) list control view. To modify the settings of the record display window, click the ***Setting*** button at the right of the page.

Recorded Video Enhancement

During playback, users can click the **Enhancement** button to enable post processing of the selected video.



General Setting

Apply active channel: The settings will be only applied to the selected channel.

Apply all channels: The settings will be only applied to those currently shown on the screen.

Filter Setting

Visibility: Select this option and adjust the gamma to change the luminance.

Sharpen: Select this option to activate the function. Move the slider control to the right to sharpen the image, to the left to soften it.

Brightness: Select this option and move the slider control to the right or left to make the image brighter or dimmer.

Contrast: Select this option and move the slider control to the right or left to increase or decrease the contrast.

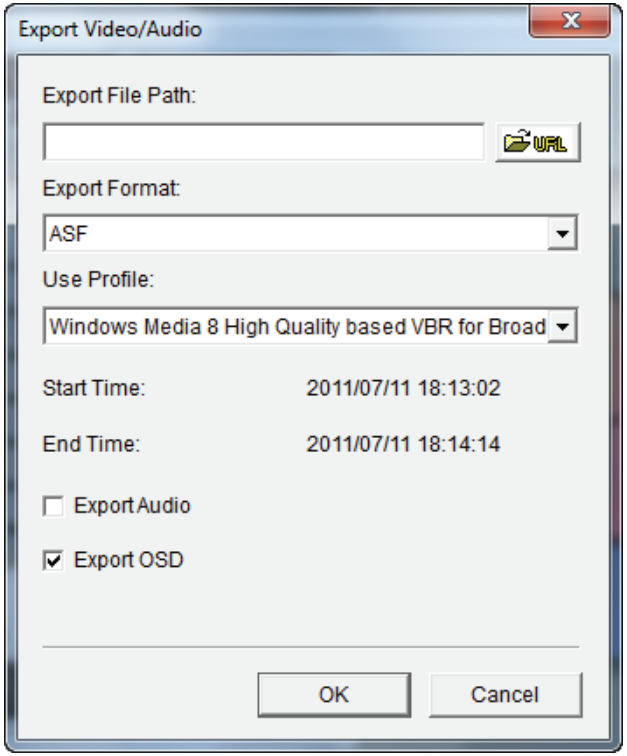
Greyscale: Select this option to display the image in black and white.

Default: Reset settings to their defaults.

OK: Apply the modifications.

Save Video

Step 1: During playback, users can choose the camera where they would like to save a video clip.
Step 2: Set the cue in and cue out points; the cue in and cue out time will be shown on the information window. Then click the **Save Video** button.
Step 3: Choose the folder where you would like to save the file.
Step 4: Input the file name and click the **Save** button.
Step 5: Choose the export format.
Step 6: Choose the use profile.
Step 7: Select the **Export Audio** option if the video has audio and you would like to export with the video.
Step 8: Click the **OK** button.

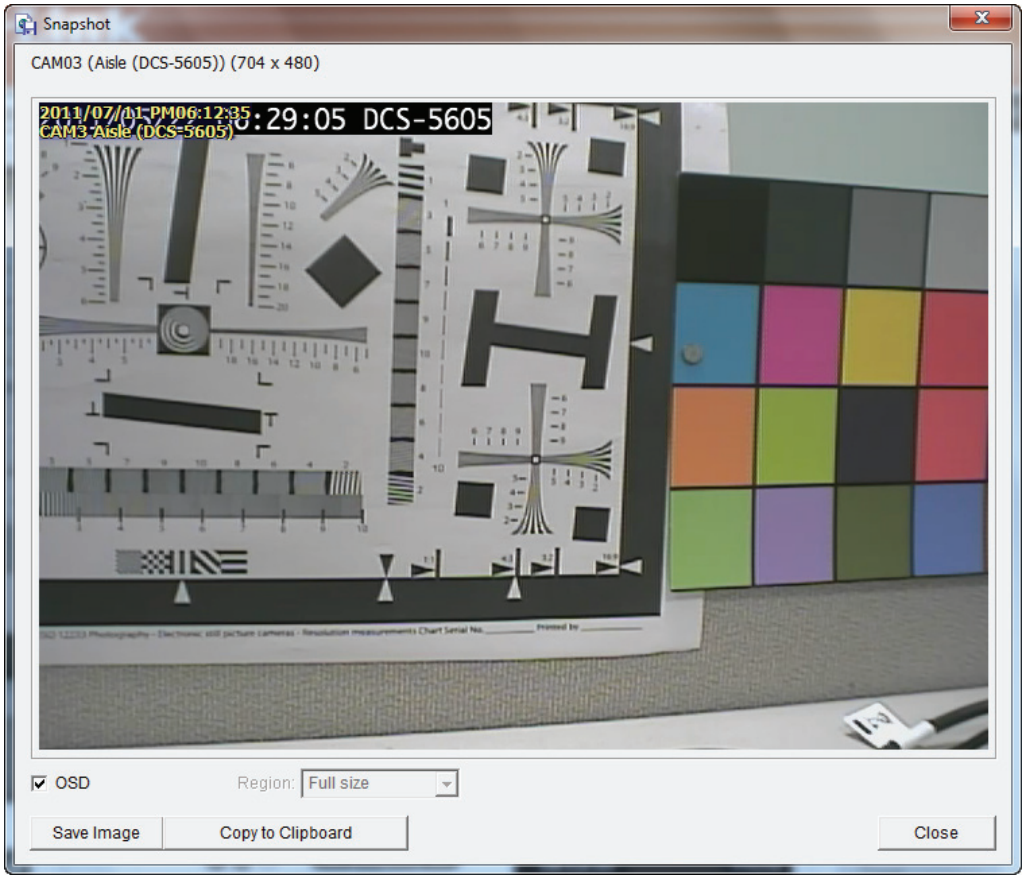


Note
The .asf format is recommended for exporting video.

Save Image

Step 1: During playback, users can choose to save an image from a selected camera.
Step 2: Click the **Save Image** button when the desired image is shown on the screen.
Step 3: Click the Save Image button again to choose the folder where you would like to save the file to.
Step 4: Choose the desired image format (BMP or JPEG).
Step 5: Input the file name.
Step 6: Click the **Save** button.

Note
You may skip step 3 by pre-selecting a folder and format for images. See the "***Setting***" option for more details.



Print Image

Step 1: During playback, user can choose to print a selected image.
Step 2: Click the **Print** button when the desired image is shown on the screen.
Step 3: Select desired print settings.

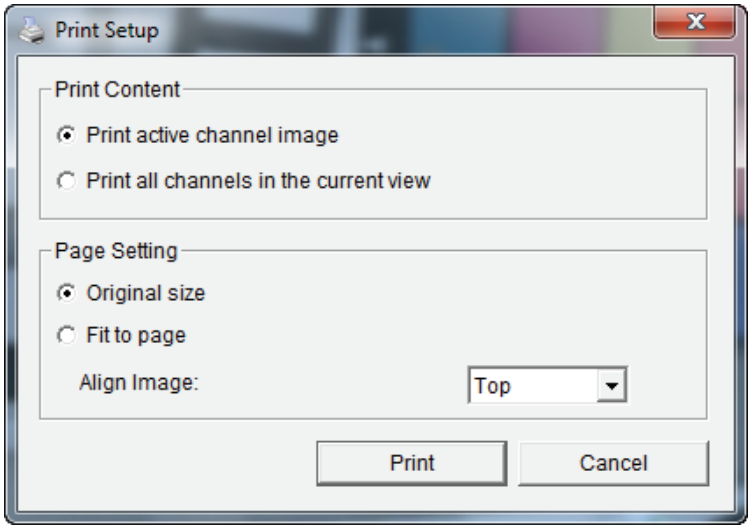
Page Setting

Print Content: Print the image from currently selected channel or all the channels shown on the screen.

Print in original size: Select this option to have the image print in original size.

Fit the page: Select this option to fit the image to the page.

Align Image: Align the top, center or bottom.



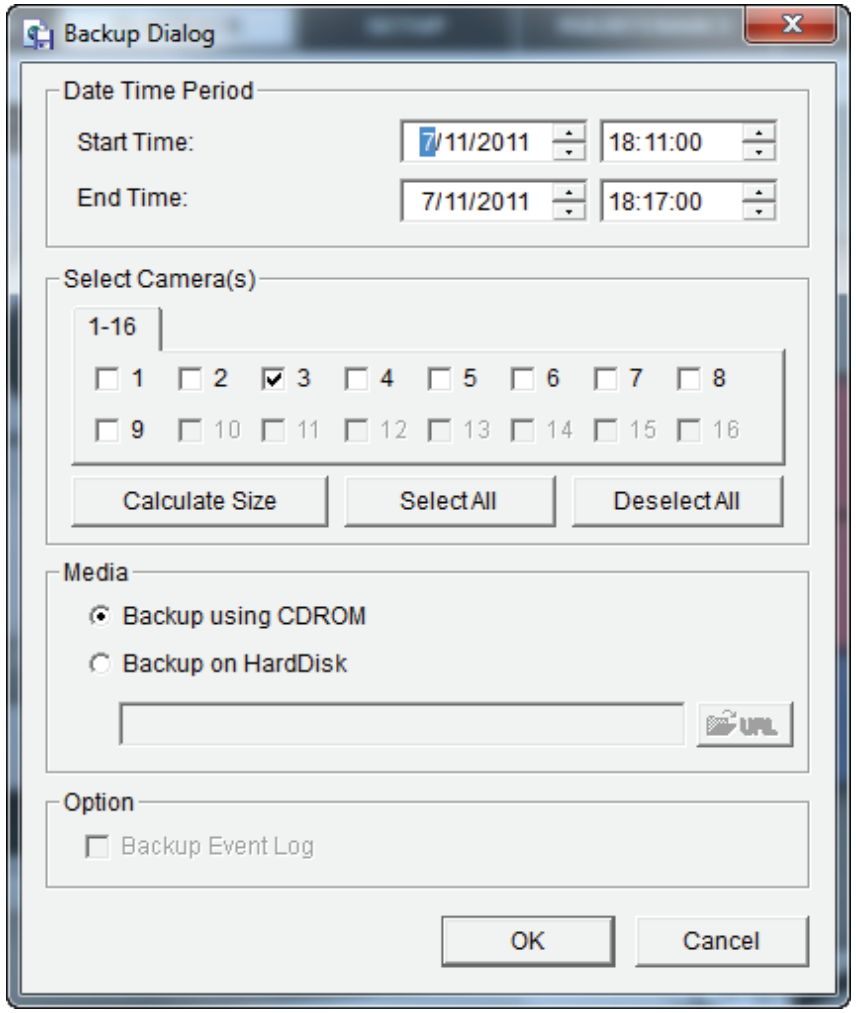
Step 4: Click the **Print** button.

Backup the Recorded Video

Unlike the Save Video function, the Backup function will save all the recorded videos during the time period you select, instead of a single video clip.

Step 1: Use **Open Record to** select the desired data.
Step 2: Click the **Backup** button.
Step 3: Set the **Start Time** and **End Time** that you would like to backup.
Step 4: Select the cameras that you would like to backup.
Step 5: Select the directory where you would like to backup the data to.
Step 6: Click the **Backup** button.

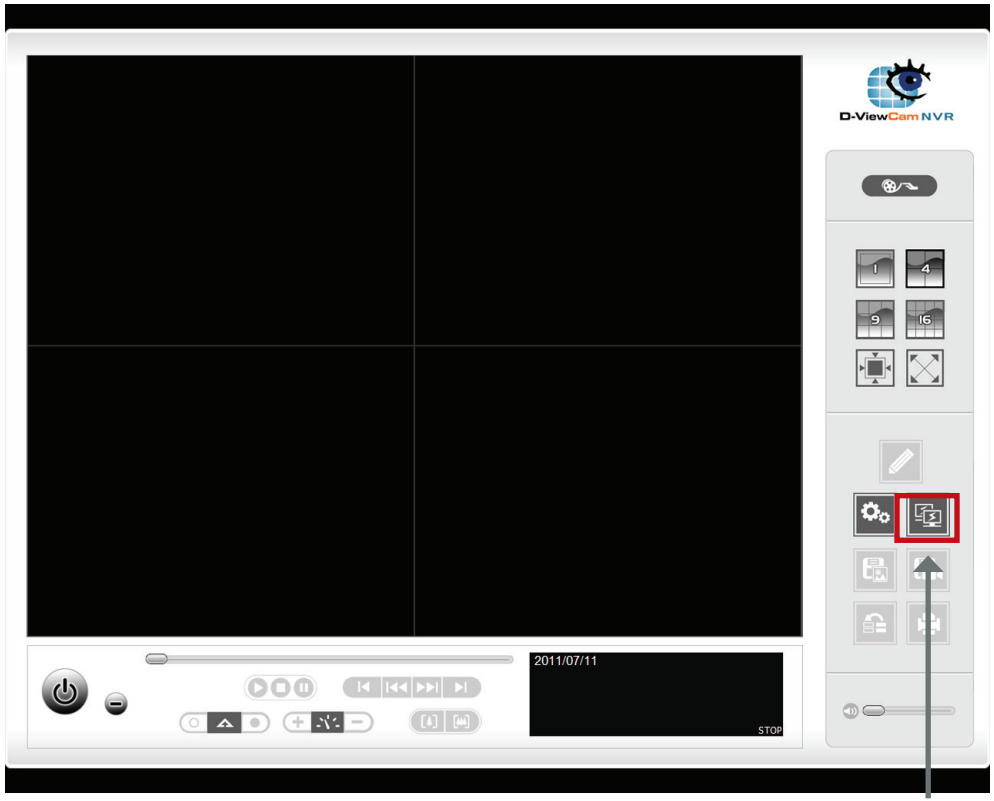
The system will then begin backup process automatically.



Playback Manager Application

Step 1: Please insert the product CD.
Step 2: Install the **Playback** application from CD.
Step 3: Run "**Playback**" application from the Start -> Programs -> D-Link -> Playback Manager

The Playback System control panel is similar to the playback panel in Internet Explorer. See page 57-58 for more details about those buttons.



1/4/9/16 Split Screen: Users can select to view a single camera or 4 cameras at a time. DNR-322L only supports 1 camera playback.

Full Screen: Select to display the video with full screen. Press ESC button on the keyboard to return to normal display.

Information Window: Display video date and time, cue in/out points, time and speed.

Audio Volume Control : Adjust the sound level.

Digital Zoom: Click the icon to digital zoom in or digital zoom out the view. Every camera can use this function.

Play/Stop/ Pause: Select a camera/video and click this button to play/stop/pause a particular channel.

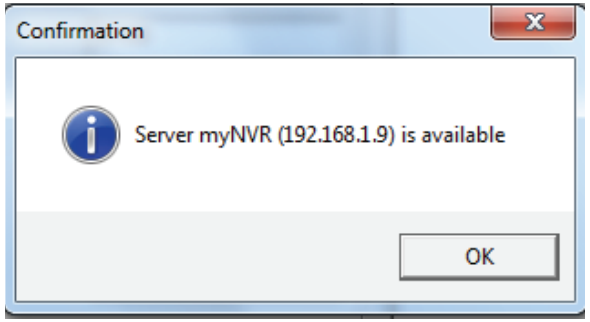
Speed: Click the + or - button to increase or decrease the playback speed.

Cue in/Cue out: Click the Cue In or Cue Out button to set the time period for Save Video.

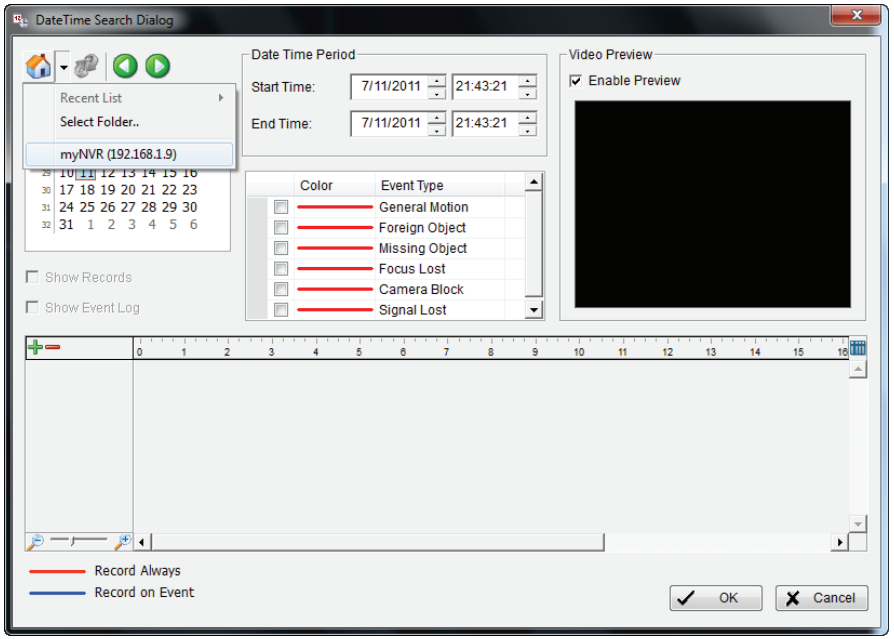
Step forward/ Reverse: Click to pause the playback and move to next frame or last frame.

Fast forward/ Reverse: Click to pause the playback and move to next minute or last minute.

Set Connections to the Units



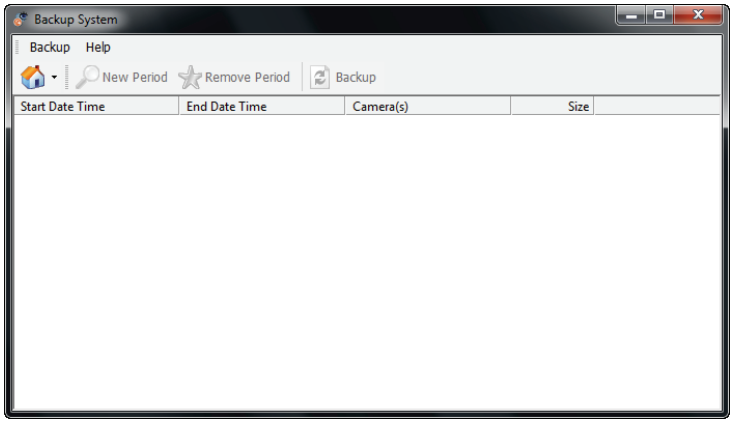
Step 1: Click the **Remote Server** button.
Step 2: Input the name of your unit.
Step 3: Input the IP address of that unit.
Step 4: Modify the port if necessary.
Step 5: Input the user name.
Step 6: Input the password.
Step 7: Check the **Save Password** option.
Step 8: Click the **Test Server** button to test the connection between the local application and the remote unit.
Step 9: Click the **Add** button to add this unit into the remote server list.
Step 10: Click the **OK** button.



The Search, Playback, Video Enhancement, Print Image, Save Video, Save Image, Backup functions are the same as the steps in the Internet Explorer, please see page 60-68.

Backup and File Manager Application

In addition to the ways mentioned in the previous chapters, you can apply the application to backup your files.
Run "Backup" application from the Start -> Programs -> D-Link -> Backup and File Manager

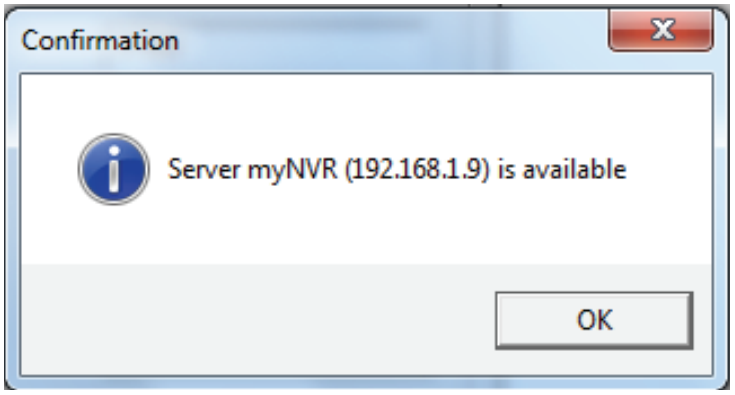


Step 1: Input the IP address of your unit.

Step 2: Input the user name.

Step 3: Input the password.

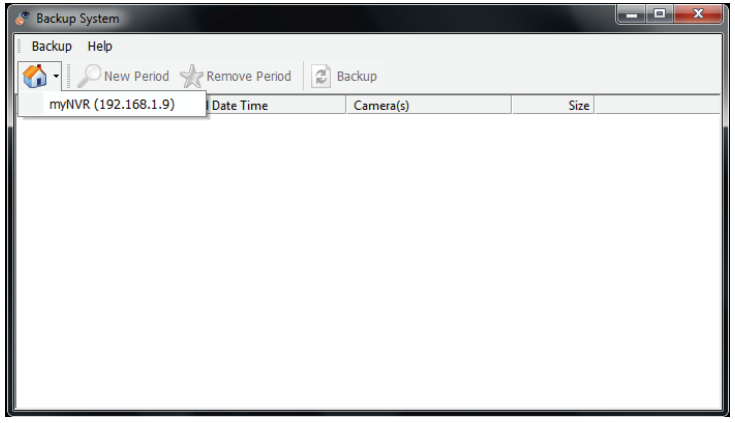
Step 4: Click the **OK** button.



Step 5: Click the **New Period** button.

Step 6: Select the record date.

Step 7: Set the **Start Time** and **End Time** you would like to backup (or highlight the video records that you would like to backup).



Step 8: Select the cameras you would like to backup.

Step 9: Click the **OK** button.

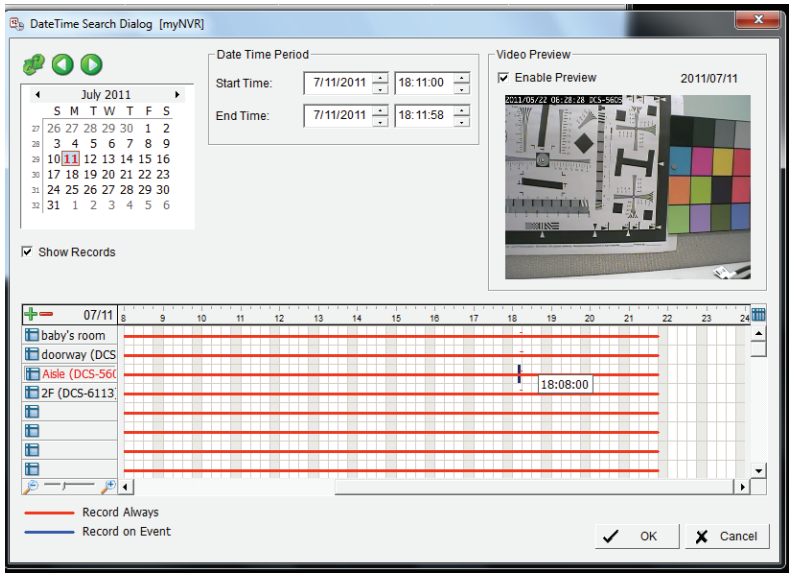
Step 10: Select the time slot which you would like to backup.

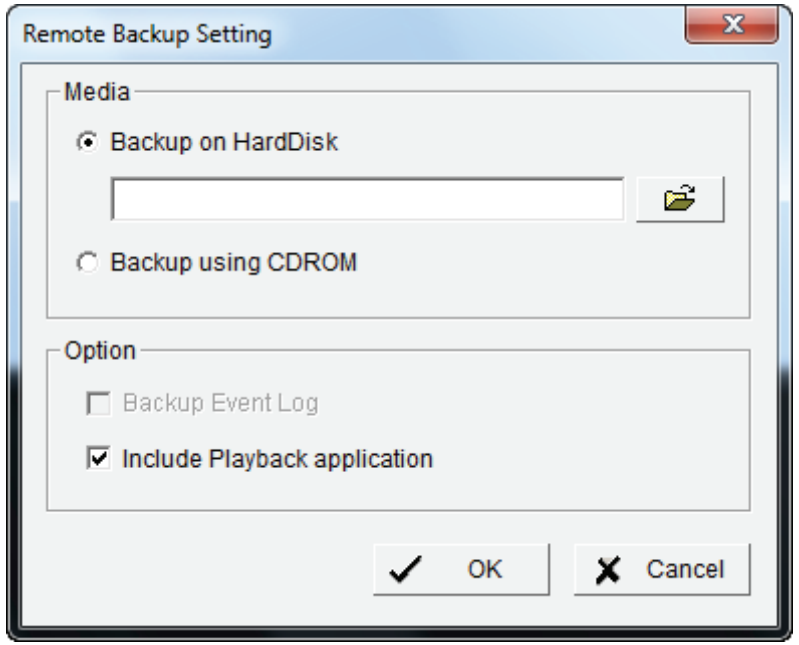
Step 11: Click the **Backup** button.

Step 12: Select the location where you would like to save the backup data.

Step 13: Check the **Include Playback application** option, which will add **Playback** application into the backup folder.

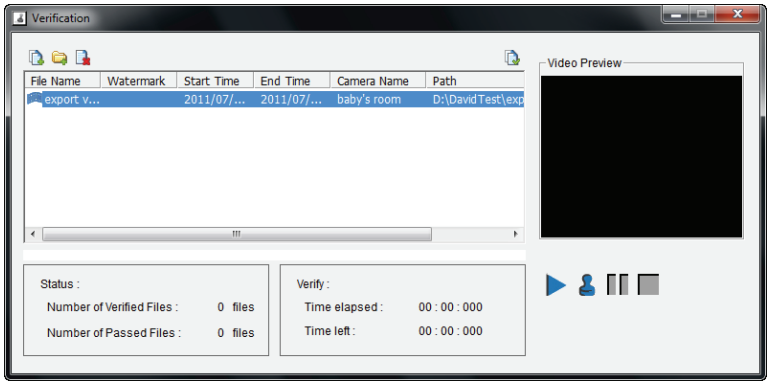
Step 14: Click the **OK** button.





Verification Tool

The Verification Tool verifies whether the data created by the system has been tampered with. It's the process by which a digital watermark (a digital signature) is added to each recorded video frame to ensure its authenticity.



There are two types of data could be verified by Verification Tool:

1. File in (.avi) (.asf).
2. File in (.bmp) (.jpg).

Add File: Insert the single file to list for verification.

Add Folder: Choose the folder with multiple files to list for verification.

Remove File: Remove indicated file(s) from list.

Select All: Select all files in list for verification.

Note
Choose the file type first before selecting files.

Verify Image / Video

1. Select single or multiple files for verification.

2. Click the Verify button to start verification.

3. The verification result will show on watermark column. If a file was tampered with, it will show ; if a file passed verification, it will show .

Troubleshooting

Check the System Status LED

The system status LED reports the condition of the enclosure fan and power supply:
Solid Blue: NVR is functioning normally
Blinking Blue: NVR is shutting down
If your unit is configured to work with a UPS, it will continue to run for a while after a power supply failure.

Check Disk Status LEDs

The disk status LEDs report the condition of the disk drives:
These lights will be solid BLUE when drives are connected but inactive.
The lights will blink when the drives are being accessed, formatted or synchronized.
They will illuminate AMBER if a drive has failed.

Replace a Failed Disk Drive

If a disk drive fails, the Disk Status LED will turn amber. If the disk drive belongs to a RAID Volume, the Volume will go Critical or Offline.
Replace the failed disk drive with a new disk drive of the same or slightly greater capacity. Please make sure you have powered down the unit.
Step 1: Open the unit's front cover.
Step 2: Pull out the failed disk drive.
Step 3: Install a new disk drive into the slot.

If the failed drive belonged to a RAID Volume, the RAID Volume will begin rebuilding as soon as the new drive is installed. During the rebuild, the Disk Status LED will blink. If the replacement drive is free, i.e. not assigned to a RAID Volume or as a spare, the Disk Status LED remains dark after you install the new drive.

Check RAID Volume Status

Click the Status -> Device Info tab from the menu.

Respond to a Critical RAID Volume

How the unit responds to a critical RAID Volume depends on the RAID level of your Volume and whether you have a spare drive available:

For **RAID 1** Volumes, if a spare drive is available, the RAID Volume will begin rebuilding itself automatically.
For **RAID 1** Volumes, when no spare drive is available, you must replace the failed disk drive. The RAID Volume will begin rebuilding itself when you install the new disk drive.

RAID 0 Volumes go offline after a disk drive failure. A **RAID 0** volume cannot be rebuilt. All data on the volume will be lost.

Restore the Default Administrator's Password

If you forget the password, you can reset the password for "admin" to the default password: **<empty>.** Press and hold the reset button for 5 seconds until the Power LED flashes three times. The Administrator password will now be blank.

Caution

When you reset or recover your unit, sometimes it will cause data corruption. Backup your recorded data before resetting your unit.

Install ActiveX

If you cannot see the complete page of the system when using Internet Explorer, the ActiveX installation process may not be complete.
Step 1: Click the **Live View/Playback** button on the top right.
Step 2: The browser will ask whether to install ActiveX.
Step 3: Click the upper bar to begin the installation process.
Step 4: Click the **Install** button to complete the process.

Cannot Login to the Unit through Internet Explorer

1. Check the settings of your anti-virus software.
2. Adjust the settings of or disable anti-virus software.

Choose a RAID Level

There are several issues to consider when choosing the RAID level. The following summarizes some advantages, disadvantages and applications for each choice.

RAID 0

Advantage

- Implements a striped disk RAID Volume, the data is broken down into blocks and each block is written to a separate disk drive
- I/O performance is greatly improved by spreading the I/O load across many channels and drives
- No parity calculation overhead is involved

Disadvantage

- Not a true RAID because it is not fault tolerant
- The failure of just one drive will result in all data in an RAID Volume being lost
- Should not be used in mission critical environments

RAID 1

Advantage

- Simplest RAID storage subsystem design
- Can increase read performance by processing data requests in parallel since the same data resides on two different drives

Disadvantage

- Very high disk overhead - uses only 50% of total capacity

Replacing or Adding a New Hard Drive

It is recommended that you backup your important files before replacing or adding a new hard drive to the NVR.

Replacing a Hard Drive:

Please make sure the power is off before replacing a hard drive. After you have installed the new drive, turn on the NVR and then connect to the Web UI. The NVR will prompt you to format the new drive (Standard, RAID 1 mode) or both drives (JBOD, RAID 0 mode).

Adding a New Hard Drive:

The NVR is able to work with one single hard drive under Standard mode. Please make sure the power is off before installing a second hard drive.

After you have installed the new drive, turn on the NVR and then connect to the Web UI. The NVR will prompt you to format the new drive.

Note: Formatting a hard drive will erase the data stored on the hard drive. Please backup important data before formatting a hard drive.

Technical Specifications

Firmware Specification

OS

+ Linux

CAMERAS SUPPORT

+ Supports all D-Link network cameras. Includes support for auto-discovery, and up to 3 megapixel resolution.

RECORDING PERFORMANCE

Max. capacity (NVR mode only):

+ H.264 1080P (bitrate): 90Mbps
+ H.264 720P (bitrate): 90Mbps
+ MJPEG 1080P (frame rate): 90fps
+ MJPEG 720P (frame rate): 192fps

Max. capacity (NVR+File Server mode):

+ H.264 1080P (bitrate): 68Mbps
+ H.264 720P (bitrate): 68Mbps
+ MJPEG 1080P (frame rate):70fps
+ MJPEG 720P (frame rate):150fps

Note: To enable the File Server function will affect the recording performance. It also differs by video compression.

CAMERA SEARCH

+ UPnP

AUDIO & VIDEO RECORDING

+ Synchronized Audio & video recording.

COMPRESSION FORMAT

+ H.264, MPEG-4, M-JPEG (depend on the Network Cameras)

VIDEO SETTING

+ Resolution, quality, frame rate, enable audio, go to camera interface

RECORDING TYPE

+ Record by schedule, manual record and event recording (motion detection from camera)

REMOTE LIVE VIEW

+ Supported via IE remote live viewer (Max. 9 simultaneous channel)
+ Supports mydlink portal (Max. 1 simultaneous channel)

REMOTE LIVE VIEW CONTROL

+ Live view, preset/go, patrol, focus, PTZ functions, snapshot, full screen, digital zoom, e-map, multiple view(1/4/6/9/16/25/36/48) with duplicated camer

REMOTE PLAYBACK

+ Supported via IE and NVR client
+ Playback system with timeline GUI, search by event, area, cameras, date and time
+ IE & NVR client support 1 channel playback
+ Digital zoom in to specific area

REMOTE PLAYBACK CONTROL

+ Playback with normal, fast forward/rewind and step forward/rewind

OVERWRITE RECORDING

+ Auto recycling when disk storage is full

FILE EXPORT

+ Export videos to "AVI" or "ASF" file
+ Export Images to "BMP" or "JPG" file

USER ACCOUNT

+ Additional accounts can be created to allow user access to the system, and specify authorization for the camera channels, PTZ, etc.

DDNS

+ D-Link DDNS server support

SYSTEM TIME

+ Set the system time (D-Link NTP, Input time, Sync with computer.

REMOTE BACKUP

+ Remote software can backup raw data to redundant storage

+ Auto backup the video of previous day to FTP server

SYSTEM STATUS
+ Camera status, System status
+ Still picture EMAP support

NETWORK SERVICE PROTOCOLS
+ IPV4, ARP, TCP, UDP, ICMP
+ DHCP Client
+ NTP Client (D-Link)
+ DNS Client
+ DDNS Client (D-Link)
+ SMTP Client
+ HTTP Server
+ PPPoE
+ UPnP
+ IP filtering

USER INTERFACE
+ mydlink web portal - Internet Explorer v7 or later
+ HTTP Web browser - Internet Explorer v7 or later (32 bit OS only)
+ NVR Search Utility

Hardware Specification

STANDARDS
+ IEEE 802.3/u/z
+ Auto MDI/MDI-X
+ SATA I, II.

HARD DISK[1]
+ Hard Disk control & manage via PC
+ Reformat Disk
+ RAID 0
+ RAID 1[2]
+ JBOD

TWO RESET MODES
+ Reset firmware GUI button
+ HW reset button (press over 5 seconds)

FLASH ROM
+ 128MB

RAM
+ 256MB DDR II

NIC
+ Gigabit Ethernet LAN port (10/100/1000 Mbps)

I/O PORTS
+ RJ45 port x1
+ DC-in jack x1
+ USB port for UPS status update (optional)

POWER ADAPTER
+ DC12V/4A

RESET BUTTON
+ Reset to factory default

SECURITY
+ Device lock hole

POWER CONSUMPTION
+ Max. power consumption: 25.20W
+ Standby state max. power consumption:0.23W

DIMENSION (WXDXH)
+ 115 (W) x 146.4 (D) x 178.5 (H) mm (4.53 x 5.76 x 7.03 inches)

WEIGHT
+ 875.1 g (1.93 lbs)

OPERATING TEMPERATURE
+ Operating: 0˚ to 55˚ C (32˚ to 131˚ F)
+ Storage: -20˚ to 70˚ C (-4˚ to 158˚ F)

HUMIDITY
+ Operating: 5% to 90% (non-condensing)

PACKAGE CONTENTS

+ 2-Bay NVR
+ Power Adapter
+ Ethernet Cable
+ Quick Installation Guide
+ Power Cable Holder
+ CD-ROM with:
  - Software
  - Product Documentation

Remark 1: An external SATA drive is required to store or share files. (Not included.)

Remark 2: RAID1 mirroring requires the use of two internal SATA drives. To avoid data incompatibility in RAID 1 operation, use identical SATA drives from the same manufacturer. Formatted drive capacity for RAID 1 operation is dependant on the drive capacity of the lowest-sized drive. Some older generation SATA drives may not be compatible. For a list of SATA drives that have been tested to work with the NVR, visit the D-Link support web site.