



User Manual

2-Bay Professional Network Video Recorder (NVR)

DNR-322L

Manual Overview

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes. Information in this document may become obsolete as our services and websites develop and change. Please refer to the www.mydlink.com website for the most current information.

Manual Revisions

Revision	Date	Description
1.00	August 02, 2011	DNR-322L A1 with firmware version 1.00
1.10	December 29, 2011	DNR-322L A1 with firmware version 1.10
1.20	March 05, 2012	DNR-322L A1 with firmware version 1.20
1.21	April 13, 2012	DNR-322L A1 with firmware version 1.20
1.22	June 19, 2012	DNR-322L A2 with firmware version 1.20
1.30	May 7, 2013	DNR-322L A2 with firmware version 1.30

Trademarks

D-Link and the D-Link logo are trademarks or registered trademarks of D-Link Corporation or its subsidiaries in the United States or other countries. All other company or product names mentioned herein are trademarks or registered trademarks of their respective companies.

Copyright © 2013 by D-Link Corporation.

All rights reserved. This publication may not be reproduced, in whole or in part, without prior expressed written permission from D-Link Corporation.

Table of Contents

Manual Overview	i	Mac	21
Manual Revisions.....	i	Install the Hard Drives.....	23
Trademarks	i	Power and Device Selection	25
Product Overview.....	1	Admin password	26
Package Contents.....	1	HDD Configuration	27
System Requirements.....	2	Search for Cameras	28
Introduction	3	Management Options.....	30
Features.....	4	Set up Internet connection	31
Hardware Overview.....	7	mydlink Portal.....	33
Front View.....	7	NVR Status.....	34
Rear Panel (Connections).....	8	Live Video	35
Getting Started	9	Playback.....	36
NVR Software CD	9	Status	37
Installation.....	10	NVR Info	38
Setup Wizard	10	D-Link NVR Search Utility	39
Windows	10	Windows	39
Install the Hard Drives.....	11	D-Link NVR Search Utility	41
Power and Device Selection	13	Mac	41
Admin password	14	Web UI Login	43
HDD Configuration and Drive Mapping.....	15	Configure Hard Drive.....	44
Search for Cameras	16	Auto Search Camera	45
Management Options.....	18	Web UI	47
Set up Internet connection	19	Configuring the NVR.....	48
Setup Wizard	21	Network Setup.....	49
		Camera Search.....	50

Camera Setup.....	51	Save Video	90
Audio and Video.....	52	Save Image.....	91
2nd Stream Settings	53	Print Image.....	92
Live and Playback Setup	54	Page Setting	92
Recording Schedule.....	55	Back up the Recorded Video.....	93
Auto Backup	58	Playback Manager Application	94
Event Setup.....	59	Set Connections to the Units.....	95
E-mail Setup.....	61	Backup System	96
Time and Date Setup.....	62	Verification Tool	98
Maintenance	63	Verify Image/Video.....	99
User Management.....	63	Troubleshooting	100
System	65	Choose a RAID Level	102
RAID.....	66	Replacing or Adding a New Hard Drive.....	103
Dynamic DNS	68	Technical Specifications	104
Firmware Update	69		
Status	70		
Camera Status.....	70		
System Info	71		
System Log.....	72		
NVR Log.....	73		
Support	74		
Live Video	75		
General Setting	78		
Multiple view.....	81		
Playback.....	82		
Open Record and Setting	85		
Search the Recorded Video to Playback.....	87		
Recorded Video Enhancement	89		

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	<ul style="list-style-type: none">• One or two 3.5" SATA hard disk drive(s)*
Network Requirements	<ul style="list-style-type: none">• Broadband Internet connection (for remote access)• Network camera(s) (refer to the D-Link website for a list of supported cameras)• 10/100/1000 Mbit Gigabit Ethernet switch or router
Web-based Configuration Utility Requirements/Remote PC Minimum Requirements	<p>Computer with the following:</p> <ul style="list-style-type: none">• Microsoft Windows® 7, Vista®, or XP (32 bits)• Pentium 4 - 2.4 GHz or higher• 512 MB or higher <p>Browser Requirements:</p> <ul style="list-style-type: none">• Internet Explorer 7.0 or higher <p>Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.</p>
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.

The 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-term recording. Thanks to the powerful embedded system, the NVR can record video from network cameras located in local or remote sites to a dedicated HDD storage without requiring your PC to be turned on.

Empowered by mydlink technology, the DNR-322L can be easily set up for Internet access. It supports real-time monitoring and playback from anywhere via an Internet browser. The triplex function can keep recording while the user is viewing live video or searching playback at the same time. The NVR's complete video management, display, and playback ability make it 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 NVR supports high-resolution megapixel recording for vivid video with high clarity.
- **Empowered by Mydlink technology:** The DNR-322L can be easily set up for Internet access. It supports real-time monitoring and playback from everywhere via your Internet browser. The recording is stored in your own HDD for high privacy, not in the online 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 on 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:** Users can control pan/tilt/zoom (PTZ) functions from within the interface using the provided interface buttons or by directly clicking on the video.
5. **Audio Support:** A single camera may be viewed full-screen with optional audio.
6. **Preset Point:** Presets from within the interface can be set to instantly restore a previously saved view.
7. **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.

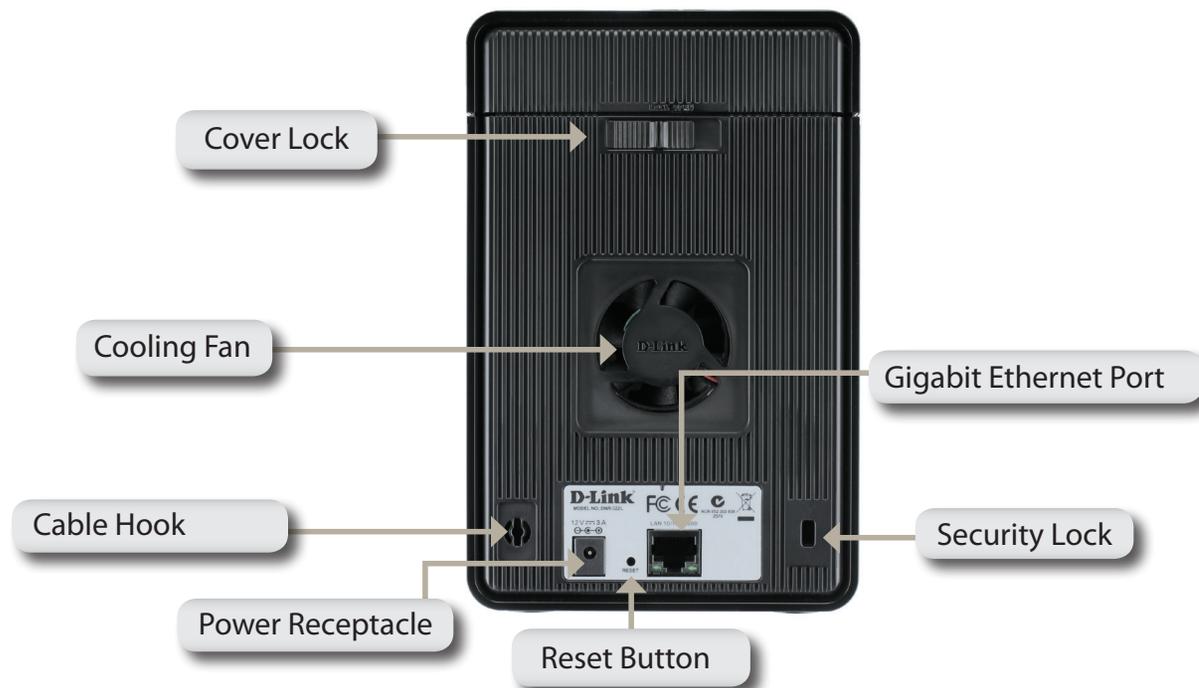
Hardware Overview

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 booting up, remain steady during normal operation.
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 prevent 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. The fans 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 the factory default setting.
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 a 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.



Setup Wizard

Windows

The following instructions show you how to set up the NVR using your Windows computer. If you are using a Mac computer, go to **Setup Wizard - Mac** on Page 21.

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 you can install one or two hard drives. Open your NVR by sliding the cover back and pulling it out. Click **Next** to continue.

The screenshot shows the D-Link installation wizard for the DNR-322L 2-Bay mylink Network Video Recorder. The title bar includes the D-Link logo and the product name. A progress indicator shows five steps, with the first step, '1 Install NVR', highlighted. A sidebar on the left lists three steps: '1 Install NVR', '2 Setup NVR', and '3 Complete'. The main content area is titled 'Pull the top out' and contains two photographs. The first photo shows a hand sliding the top cover back. The second photo shows the top cover being pulled away from the device. Below the photos, the text reads: 'Access the drive bays by sliding the top back until it unlatches from the device.' and 'Once the faceplate is unlatched, pull it off the device to expose the drive bays.' Below this text is the instruction 'Click NEXT to continue.' At the bottom of the main area are 'PREV' and 'NEXT' buttons. A footer bar contains navigation links: 'NVR Search', 'Quick Guide', 'Manual', 'Acrobat reader', 'D-ViewCam NVR Basic', 'About', 'Support', and 'Exit'. The copyright notice at the bottom reads: 'Copyright © 2011-2012 D-Link Corporation and D-Link System, Inc. All rights reserved.'

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

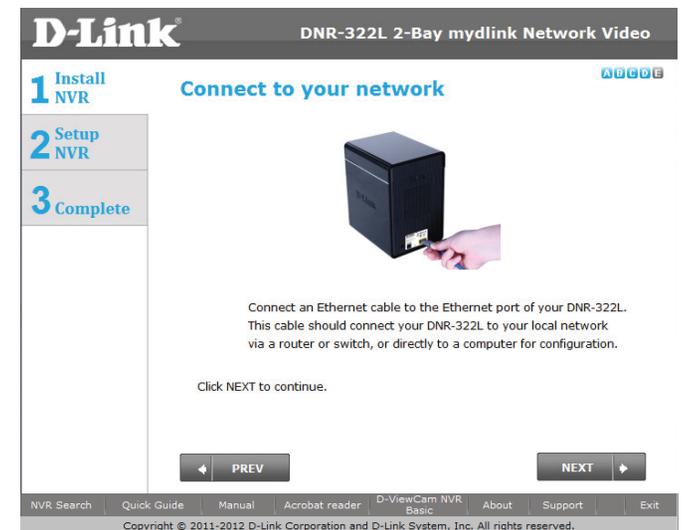
Note: The NVR will use the default login ID of admin and .

The screenshot shows the D-Link installation wizard for the DNR-322L 2-Bay mylink Network Video Recorder. The title bar includes the D-Link logo and the product name. A progress indicator shows five steps, with the first step, '1 Install NVR', highlighted. A sidebar on the left lists three steps: '1 Install NVR', '2 Setup NVR', and '3 Complete'. The main content area is titled 'Install the hard drive(s)' and contains a photograph of a hand inserting a hard drive into the device. Below the photo, the text reads: 'Align your 3.5" SATA hard drive(s) with the grooves in the enclosure and insert it into the drive bay until it is firmly in place. If a drive has been inserted incorrectly, the LED will not light up.' Below this text is the instruction 'Click NEXT to continue.' At the bottom of the main area are 'PREV' and 'NEXT' buttons. A footer bar contains navigation links: 'NVR Search', 'Quick Guide', 'Manual', 'Acrobat reader', 'D-ViewCam NVR Basic', 'About', 'Support', and 'Exit'. The copyright notice at the bottom reads: 'Copyright © 2011-2012 D-Link Corporation and D-Link System, Inc. All rights reserved.'

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



Use the included standard CAT5E Ethernet cable with a RJ-45 connector to connect your NVR to your network. Click **Next** to continue.



Power and Device Selection

First, connect the power adapter to the power receptor on the back of the NVR. Press the power button located under the faceplate LEDs to turn on the NVR. Click **Next** on the Setup Wizard to continue.



Select your device from the device selection area. A confirmation window will appear asking you to check if the device's Power LED is solid. If it is solid, select **Yes** in the confirmation window. Otherwise select **No**. 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.

Note: All configured NVRs are shown with their names in orange, while all NVRs not configured are in blue.



Admin password

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

The screenshot shows the 'Input the admin password' step in the D-Link web interface. The page title is 'D-Link DNR-322L 2-Bay mydlink Network Video Recorder'. On the left, a progress bar shows three steps: '1 Install NVR', '2 Setup NVR', and '3 Complete'. The main content area is titled 'Input the admin password' and includes instructions: 'Enter your administrator account password in order to log into your NVR. For the first installation, the password should be blank. The username should be "admin".' There are two input fields: 'Username:' with 'admin' entered, and 'Password:' which is empty. Navigation buttons 'PREV' and 'NEXT' are at the bottom. A footer contains links for 'NVR Search', 'Quick Guide', 'Manual', 'Acrobat reader', 'D-ViewCam NVR Basic', 'About', 'Support', and 'Exit', along with a copyright notice for 2011-2012.

In this step you can create a new password for the Admin username. It is recommended you set a password. Click **Next** to continue.

The screenshot shows the 'Create a new password for your NVR' step in the D-Link web interface. The page title is 'D-Link DNR-322L 2-Bay mydlink Network Video Recorder'. On the left, a progress bar shows three steps: '1 Install NVR', '2 Setup NVR', and '3 Complete'. The main content area is titled 'Create a new password for your NVR' and includes instructions: 'Create a new password to secure your NVR. You will need to use "admin" as the username and the new password you have created whenever you login to the GUI of your NVR.' There are three input fields: 'Admin ID:' with 'admin' entered, 'Password:', and 'Confirm Password:'. A red note below the fields states: 'Note: Password must contain at least 5-16 characters.' Navigation buttons 'PREV' and 'NEXT' are at the bottom. A footer contains links for 'NVR Search', 'Quick Guide', 'Manual', 'Acrobat reader', 'D-ViewCam NVR Basic', 'About', 'Support', and 'Exit', along with a copyright notice for 2011-2012.

HDD Configuration and Drive Mapping

Select one of the Volume File Systems types. Clicking on the radio button for each file system type will bring up a description. Click **Next** to continue.

The screenshot shows the 'Set up HDD for NVR' configuration page. On the left, a progress bar indicates three steps: 1. Install NVR (selected), 2. Setup NVR, and 3. Complete. The main content area is titled 'Set up HDD for NVR' and includes a table for 'Physical Disk Info' and radio buttons for 'Select hard disk configuration'.

Slot	Vendor	Model	Serial Number	Size
R	Seagate	ST31000340NS	9QJ1LVGX	1000
L	Seagate	ST31000340NS	9QJ1M0KS	1000

Under 'Select hard disk configuration', the 'NVR + File Server' option is selected. Below it, a note states: 'NVR + File Server: You can have first HDD with volume 1 which used for NVR recording and second HDD with volume 2 for File Server.' An important notice at the bottom reads: 'Important Notice: Next step will format your HDD, all existing data will be erased! If you don't want to change the HDD configuration, please skip this step.'

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 be formatted as a File Server and mounted to your Windows system as a Network Drive.
2. You can also use the NVR Search utility to set up the Network Drive mapping.

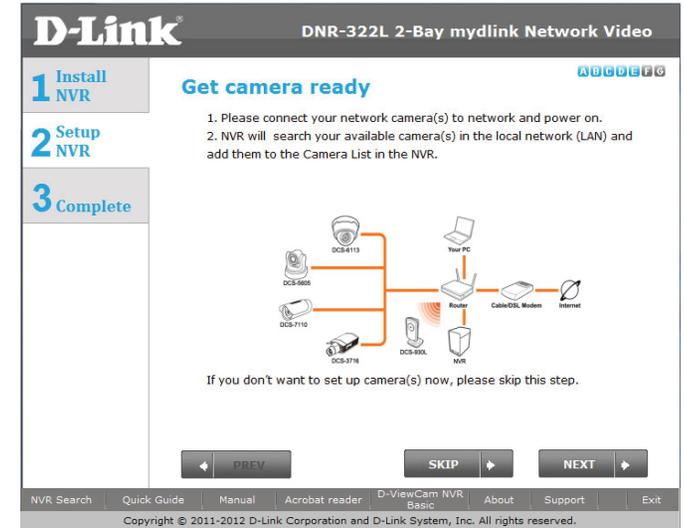
The screenshot shows the 'Mount drive to network' configuration page. On the left, the progress bar shows step 2 'Setup NVR' as the active step. The main content area is titled 'Mount drive to network' and contains two dropdown menus for selecting drive letters. The first dropdown is labeled 'Available drive 1 letter:' and the second is 'Available drive 2 letter:'. At the bottom, there are navigation buttons for 'PREV', 'SKIP', and 'NEXT'.

Search for Cameras

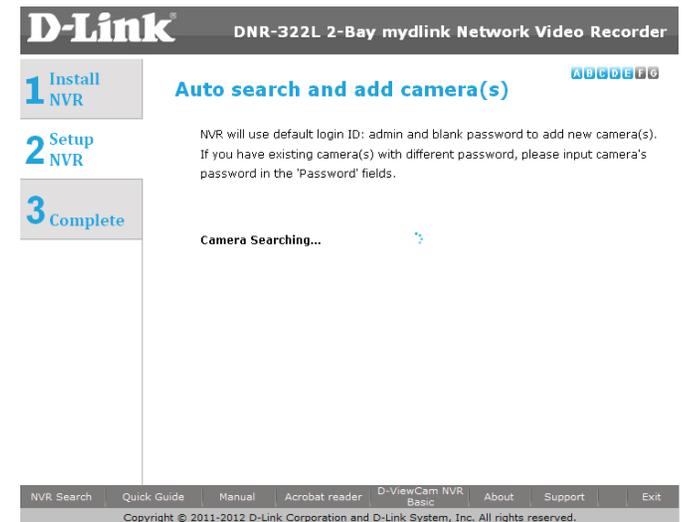
Please connect your network cameras to your network and power them on.

Click **Next** to continue.

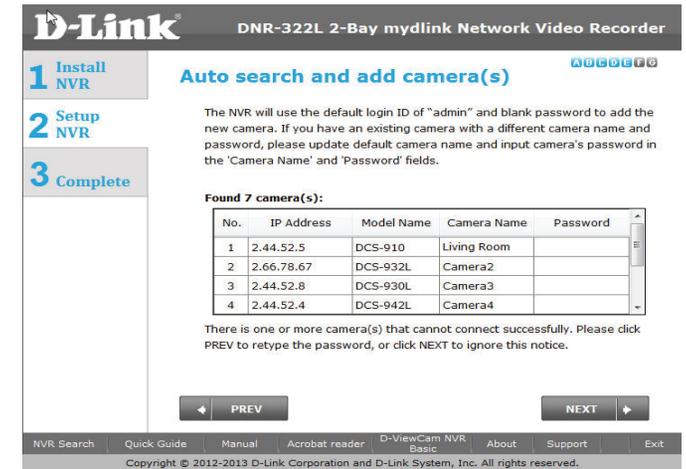
The NVR will search for your available cameras in your local network (LAN) and will add them to the camera list in the NVR.



The NVR will search for your available cameras in your local network (LAN) and will add them to the camera list in the NVR.



The NVR will use the default login ID of **admin** and a blank password to add new cameras. If you have an existing camera with a different camera name and password, please update the default camera name and input the camera's password in the Camera Name and Password fields.



D-Link DNR-322L 2-Bay mydlink Network Video Recorder

1 Install NVR

2 Setup NVR

3 Complete

Auto search and add camera(s)

The NVR will use the default login ID of "admin" and blank password to add the new camera. If you have an existing camera with a different camera name and password, please update default camera name and input camera's password in the 'Camera Name' and 'Password' fields.

Found 7 camera(s):

No.	IP Address	Model Name	Camera Name	Password
1	2.44.52.5	DCS-910	Living Room	
2	2.66.78.67	DCS-932L	Camera2	
3	2.44.52.8	DCS-930L	Camera3	
4	2.44.52.4	DCS-942L	Camera4	

There is one or more camera(s) that cannot connect successfully. Please click PREV to retype the password, or click NEXT to ignore this notice.

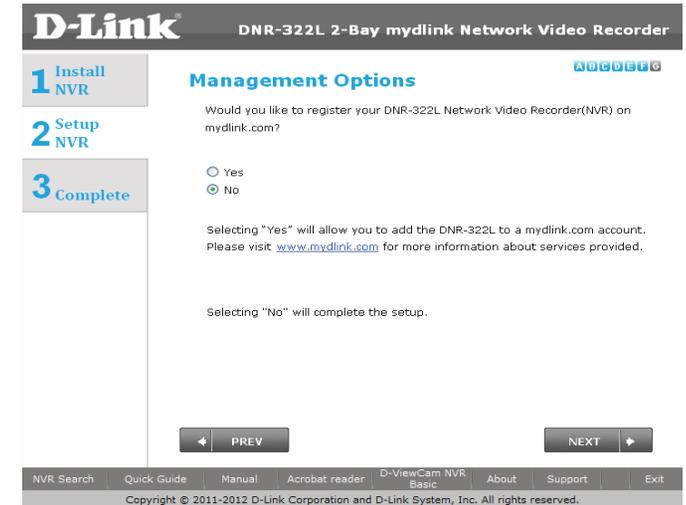
PREV NEXT

NVR Search Quick Guide Manual Acrobat reader D-ViewCam NVR Basic About Support Exit

Copyright © 2012-2013 D-Link Corporation and D-Link System, Inc. All rights reserved.

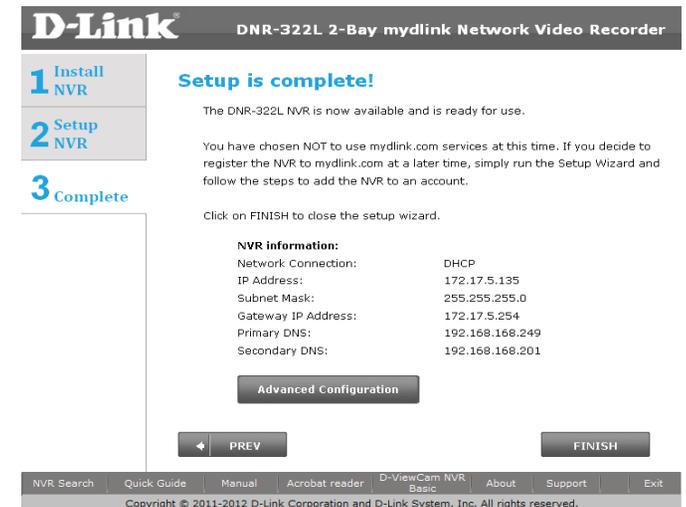
Management Options

To register the DNR-322L NVR on www.mydlink.com, select **Yes** and click **Next**. You will be taken to the **Set Up Your Internet Connection** page. If you prefer to do this later, select **No** and click **Next** to complete the setup. You will be taken to the **Setup is Complete** page in the next step.



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

Click **Advanced Configuration** to manage and adjust the configuration of the NVR. A browser window will automatically open and allow you to log into the DNR-322L web-based configuration utility.



Set up Internet connection

Setup Wizard will try to automatically connect to the Internet.

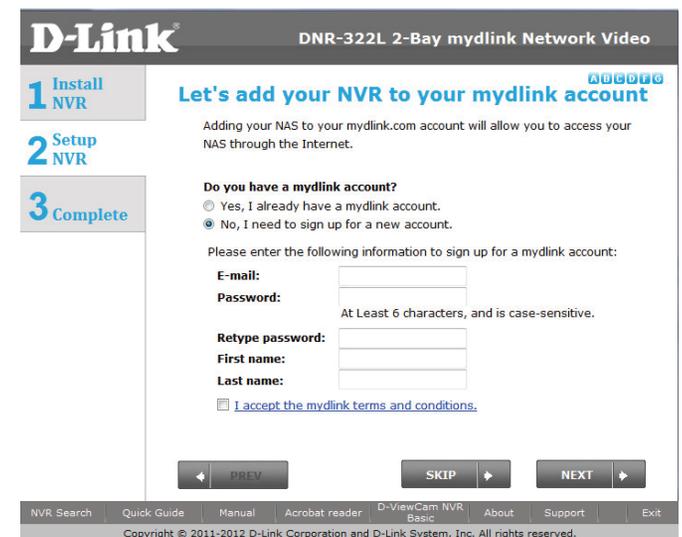
Note:

If 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. Please contact your ISP for setup details.

If you don't have the Internet connection information at this time, 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 NVR is able to connect to the Internet, you will need to log in to mydlink. If you already have a mydlink account, click **Yes**, enter your account details, and click **Next**.

If you do not have a mydlink account, select **No**, and fill in the text boxes to create a mydlink account, and click **Next**.



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

Note:

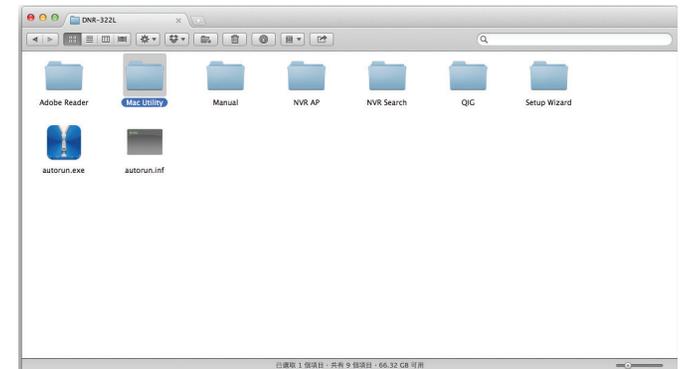
Your drives are network mapped, so you will be able to access them under My Computer.



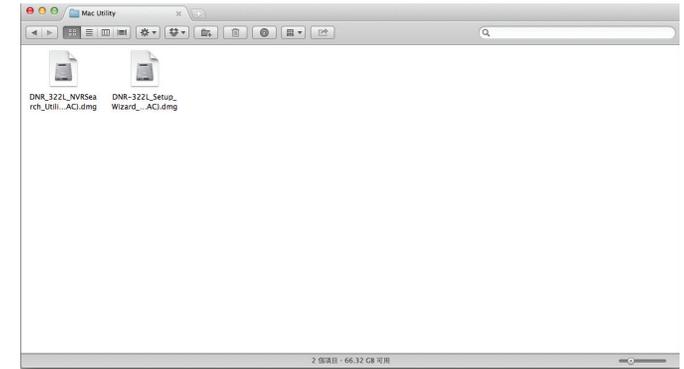
Setup Wizard Mac

The following instructions show you how to set up the NVR using your Mac computer.

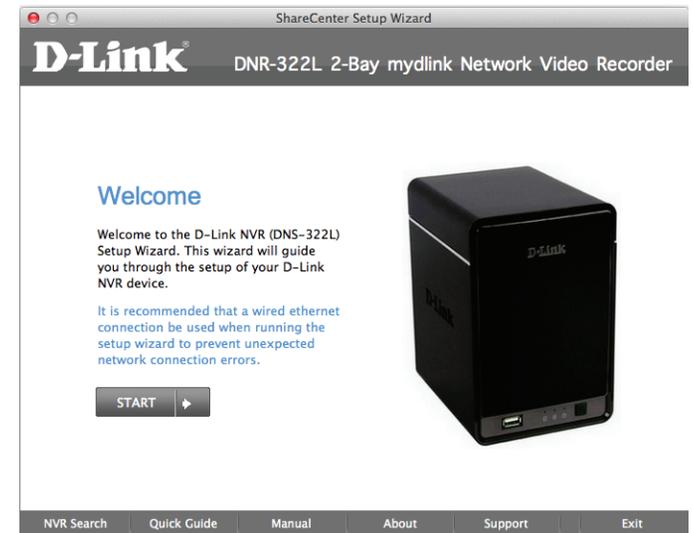
After you have inserted the CD into your computer, go to the CD drive directory, and double-click the Mac Utility folder to enter.



Double-click the DNR-322L Setup Wizard file to start the Setup Wizard, which will guide you through the installation process from connecting your hardware to configuring your NVR.



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 you can install one or two hard drives. Open your NVR by sliding the cover back and pulling it out. Click **Next** to continue.



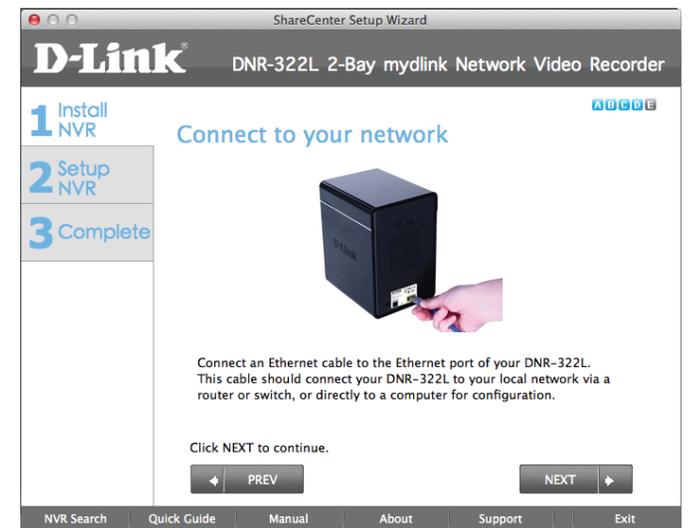
Slide either one or two hard drives into the open hard drive bays of your device. Click **Next** to continue.



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



Use the included standard CAT5E Ethernet cable with a RJ-45 connector to connect your NVR to your network. Click **Next** to continue.



Power and Device Selection

First, connect the power adapter to the power receptor on the back of the NVR. Press the power button located under the faceplate LEDs to turn on the NVR. Click **Next** on the Setup Wizard to continue.



Select your device from the device selection area. A confirmation window will appear asking you to check if the device's Power LED is solid. If it is solid, select **Yes** in the confirmation window. Otherwise select **No**. 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.

Note: All configured NVRs are shown with their names in orange, while all NVRs not configured are in blue.



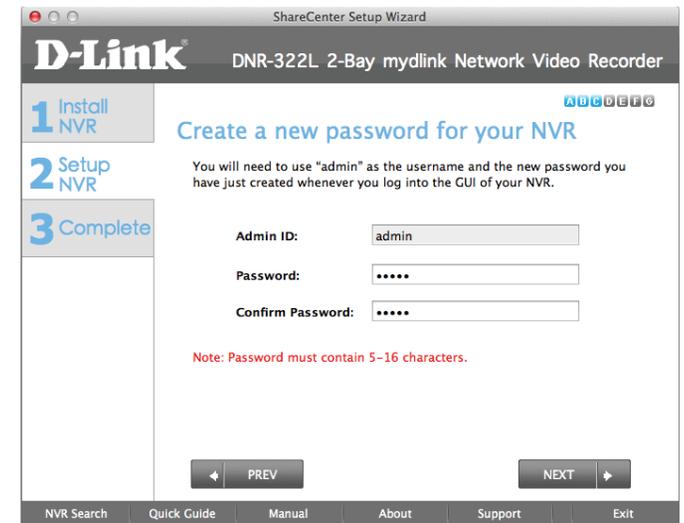
Admin password

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



The screenshot shows the 'Input the admin password' step of the D-Link ShareCenter Setup Wizard. The window title is 'ShareCenter Setup Wizard' and the device is identified as 'DNR-322L 2-Bay mydlink Network Video Recorder'. The progress bar shows '1 Install NVR' as the current step, '2 Setup NVR' as the next step, and '3 Complete' as the final step. The main heading is 'Input the admin password'. Below the heading, there is a text box with the instruction: 'Enter your administrator account password in order to login to your NVR. For the first install, the password should be blank. The username should be "admin".' There are two input fields: 'Username:' with the value 'admin' and 'Password:' which is empty. At the bottom, there are 'PREV' and 'NEXT' buttons. A footer bar contains links for 'NVR Search', 'Quick Guide', 'Manual', 'About', 'Support', and 'Exit'.

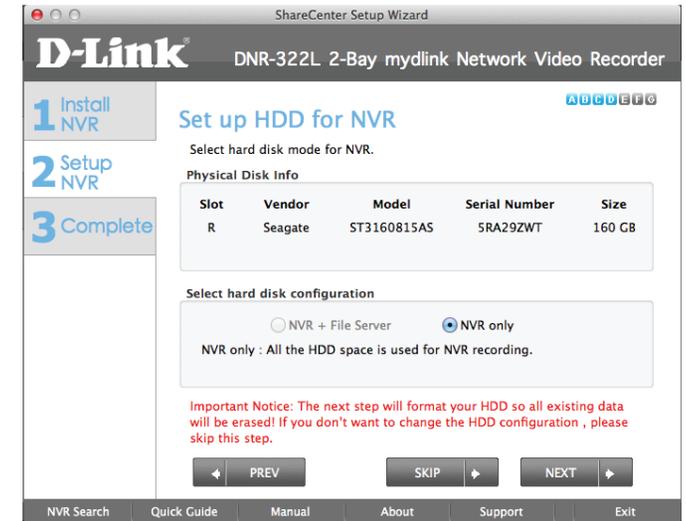
In this step you can create a new password for the Admin username. It is recommended you set a password. Click **Next** to continue.



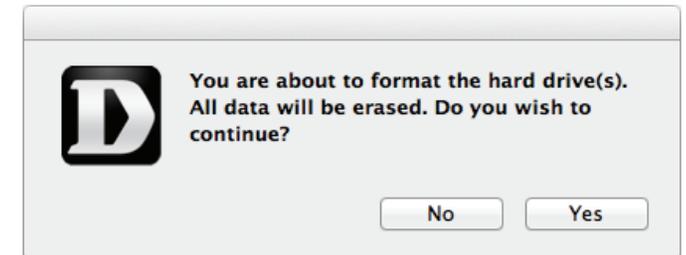
The screenshot shows the 'Create a new password for your NVR' step of the D-Link ShareCenter Setup Wizard. The window title is 'ShareCenter Setup Wizard' and the device is identified as 'DNR-322L 2-Bay mydlink Network Video Recorder'. The progress bar shows '1 Install NVR' as the current step, '2 Setup NVR' as the next step, and '3 Complete' as the final step. The main heading is 'Create a new password for your NVR'. Below the heading, there is a text box with the instruction: 'You will need to use "admin" as the username and the new password you have just created whenever you log into the GUI of your NVR.' There are three input fields: 'Admin ID:' with the value 'admin', 'Password:' with five asterisks, and 'Confirm Password:' with five asterisks. A red note below the fields states: 'Note: Password must contain 5-16 characters.' At the bottom, there are 'PREV' and 'NEXT' buttons. A footer bar contains links for 'NVR Search', 'Quick Guide', 'Manual', 'About', 'Support', and 'Exit'.

HDD Configuration

Select one of the Volume File Systems types. Clicking on the radio button for each file system type will bring up a description. Click **Next** to continue.



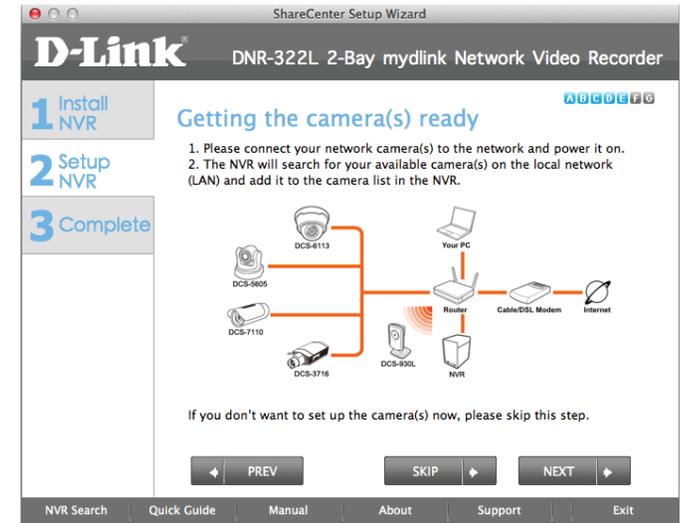
This step allows you to map the volume created as a network drive on your computer. This will format your hard drive and result in all existing data being erased. Click **Yes** on the confirmation message to continue.



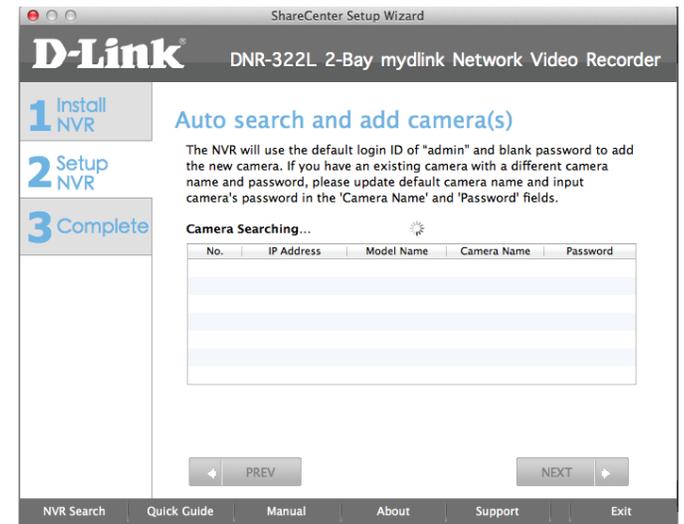
Search for Cameras

Please connect your network cameras to your network and power them on.

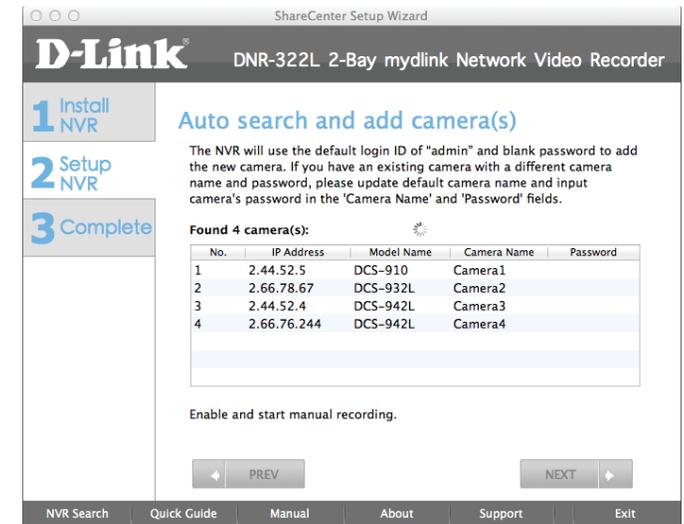
Click **Next** to continue. The NVR will search for your available cameras in your local area network (LAN) and will add them to the camera list in the NVR.



The NVR will search for your available cameras in your local network (LAN) and will add them to the camera list in the NVR.

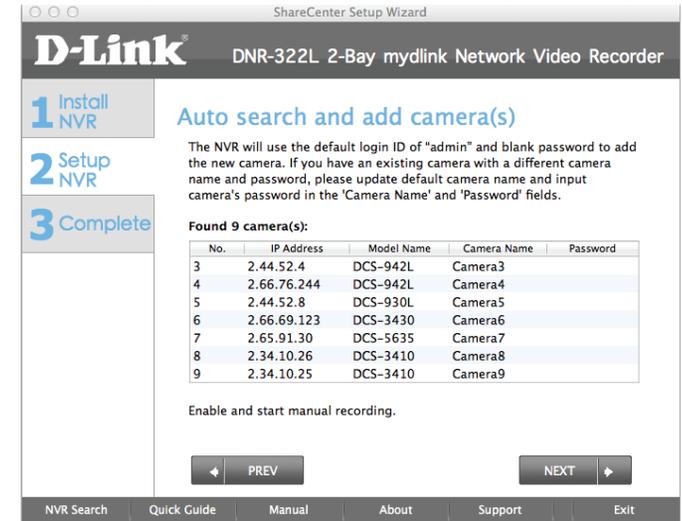


The NVR will use the default login ID of **admin** and a blank password to add new cameras. If you have an existing camera with a different camera name and password, please update the default camera name and input the camera's password in the Camera Name and Password fields.



Management Options

To register the DNR-322L NVR on www.mydlink.com, select **Yes** and click **Next**. You will be taken to the **Set Up Your Internet Connection** page. If you prefer to do this later, select **No** and click **Next** to complete the setup. You will be taken to the **Setup is Complete** page in the next step.



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

Click **Advanced Configuration** to manage and adjust the configuration of the NVR. A browser window will automatically open and allow you to log into the DNR-322L web-based configuration utility.



Set up Internet connection

Setup Wizard will try to automatically connect to the Internet.

Note:

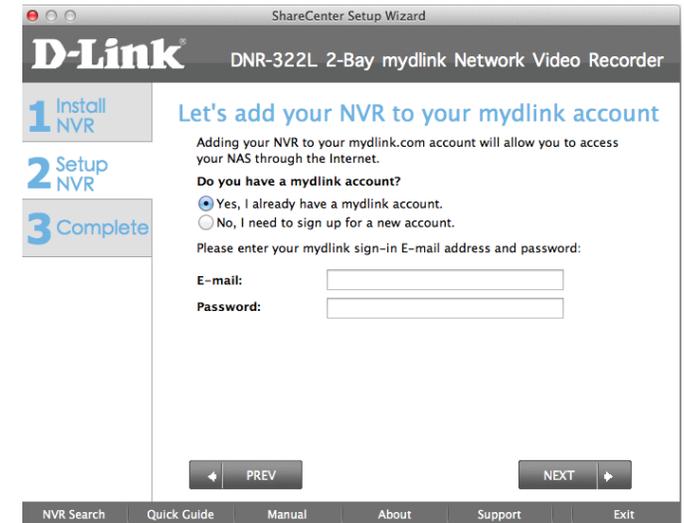
If the NVR is not able to connect to the Internet, Setup Wizard will allow you to set up the PPPoE or Static IP for Internet connection. Please contact your ISP for setup details.

If you don't have the Internet connection information at this time, 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 log in to mydlink.

If you already have a mydlink account, click **Yes**, enter your account details, and click **Next**.

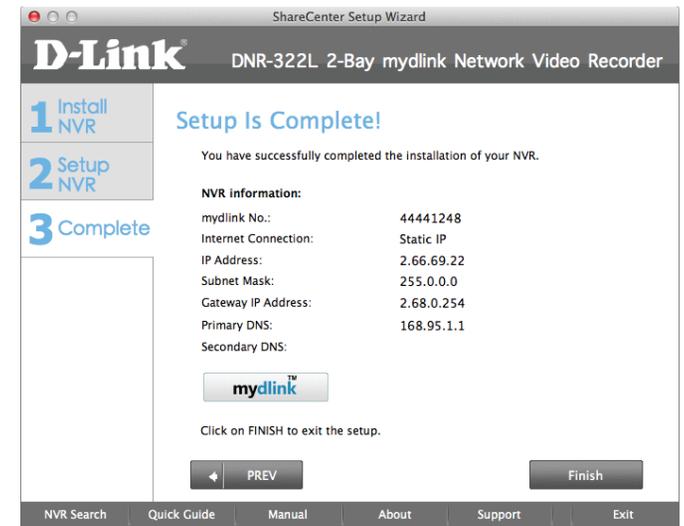
If you do not have a mydlink account, select **No**, and fill in the text boxes to create a mydlink account, and click **Next**.



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

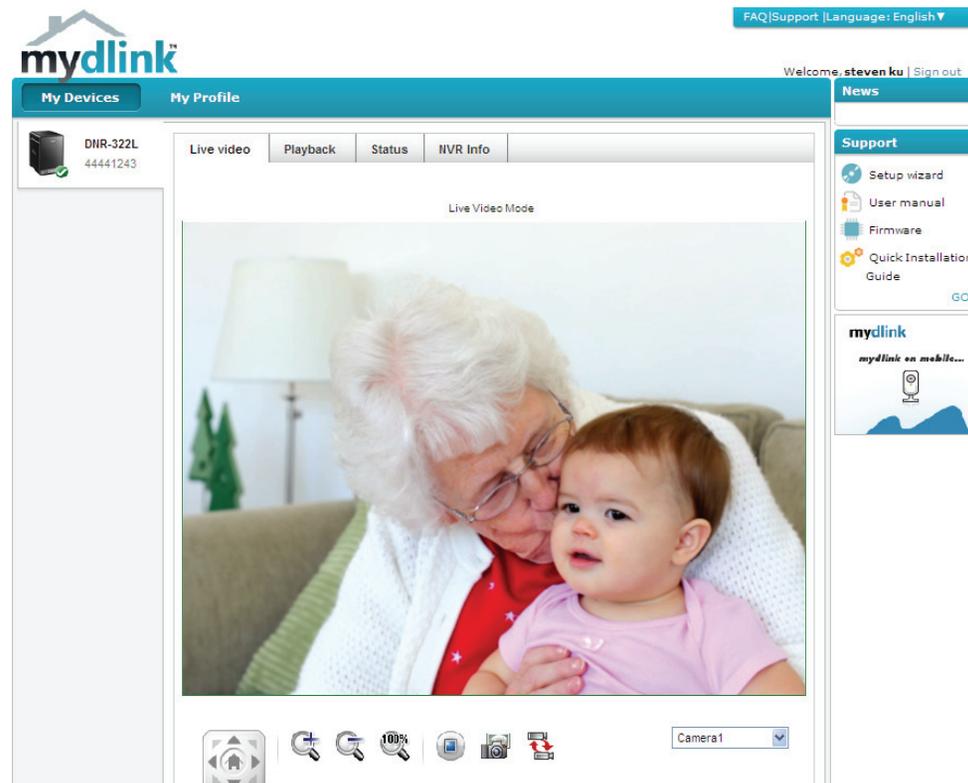
Note:

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 www.mydlink.com. After you log into your mydlink account, you will see a screen similar to this one:



NVR Status

Here, you can see the online status of each NVR. 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.

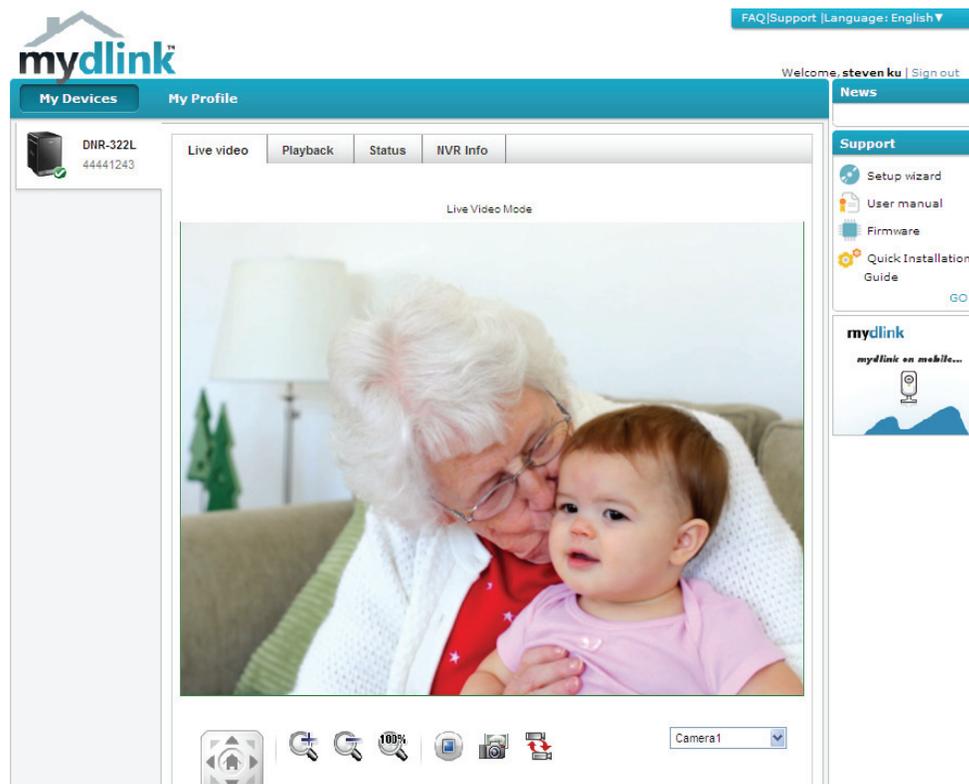
If your NVR is offline, try the following:

- 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.

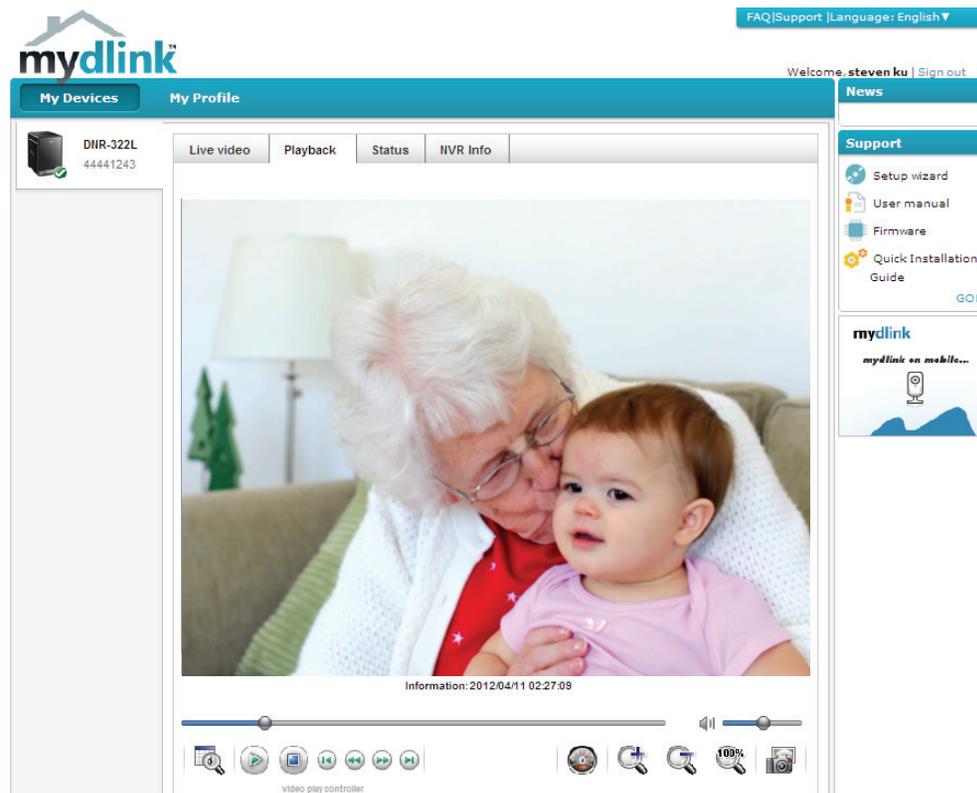
Live Video

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 log in to NVR first. The default login ID is **admin** and the password is blank. The Live Video feed will then be displayed. You can choose a different camera from the dropdown list. If the NVR is recording, you will see a red dot icon showing on the top right corner on the screen.



Playback

The NVR Playback tab allows you to access your NVR's playback interface. You can select footage for playback, then zoom in, take screenshots, and adjust the playback speed.



Status

The NVR Status tab allows you to view your NVR's information and camera status. The NVR's hard drive capacity, unused space, total recording time, and remaining recording time are displayed. You can also view the camera status and disconnect it.

Total Hard Drive Capacity: Displays the total hard drive capacity of your NVR.

Unused Space: Displays the free space remaining on your NVR.

Estimated Total Recording Time: Displays the estimated total recording time that can be done on the NVR.

Estimated Remaining Recording time: Displays the estimated remaining recording time that can be done on the NVR.

Camera Status: Displays the connection status, recording status, frame rate, and bit rate of your camera.

The screenshot shows the mydlink portal interface. At the top, there is a navigation bar with 'mydlink' logo, 'FAQ | Support | Language: English', and a user greeting 'Welcome, steven ku | Sign out'. Below the navigation bar, there are tabs for 'My Devices' and 'My Profile'. The main content area is divided into sections: 'Disk Status' and 'Camera Status'. The 'Disk Status' section displays the following information:

Total Hard Drive Capacity:	151777MB
Unused Space:	139079MB
Estimated Total Recording Time:	7 day(s) and 23 hour(s)
Estimated Remaining Recording Time:	7 day(s) and 7 hour(s)

The 'Camera Status' section displays a table with the following data:

Index	Name	Connection Status	Recording Status	Frame Rate	Bit Rate
1	Camera1	Connected Disconnect	Manual Recording-Recording	30.3fps	1758.6Kbps

Below the table, it shows 'Last Update at 2012/3/11 11:43:43 AM'. On the right side of the page, there is a 'Support' section with links for 'Setup wizard', 'User manual', 'Firmware', and 'Quick Installation Guide'. At the bottom of the page, there is a footer with links for 'Global D-Link', 'About mydlink', 'Terms of Use', 'Privacy Policy', and 'Contact Us', along with the copyright notice 'Copyright©2008-2012 D-Link Corp. All rights reserved.'

NVR Info

The NVR Info tab shows you information about your NVR.

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

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

Model Name: Displays the model name of your device.

MAC: Displays the MAC address of your device.

NVR activated on: Displays the time and date that your device was added to mydlink.

Advanced Setting: This section takes you to the login page for the NVR's Web GUI Interface. After you log in, you can adjust advanced settings for the NVR.

Delete NVR: This allows you to remove your camera from your mydlink account.

The screenshot displays the mydlink web portal interface. At the top right, there are links for 'FAQ | Support | Language: English' and a user greeting 'Welcome, **steven ku** | Sign out'. The main navigation bar includes 'My Devices' and 'My Profile'. The 'My Devices' section shows a device icon and the text 'DNR-322L 44441243'. Below this, there are tabs for 'Live video', 'Playback', 'Status', and 'NVR Info', with 'NVR Info' being the active tab. The NVR Info section displays the following details:

NVR Name:	DNR-322L
mydlink No.:	44441243
Model Name:	DNR-322L
MAC:	003220000101
NVR activated on:	2012-04-11 11:28:22

Below the table, there are two instructions with corresponding buttons:

- You can set up advance configuration by clicking **Advanced Setting** Button. (Button: **Advanced Setting**)
- You can remove your camera by clicking **Delete NVR** button. (Button: **Delete NVR**)

On the right side of the interface, there is a 'Support' section with links for 'Setup wizard', 'User manual', 'Firmware', and 'Quick Installation Guide'. At the bottom of the page, there is a footer with links for 'Global D-Link | About mydlink | Terms of Use | Privacy Policy | Contact Us' and a copyright notice: 'Copyright©2008-2012 D-Link Corp. All rights reserved.'

D-Link NVR Search Utility Windows

For Windows, you can insert the CD and click NVR Search Utility to run another useful setup tool. For Mac, please go on to Page 41. 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 logging 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.

Receive DHCP:

Select **Enable** to use DHCP for your LAN IP settings, or **Disable** to use static IP.

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:

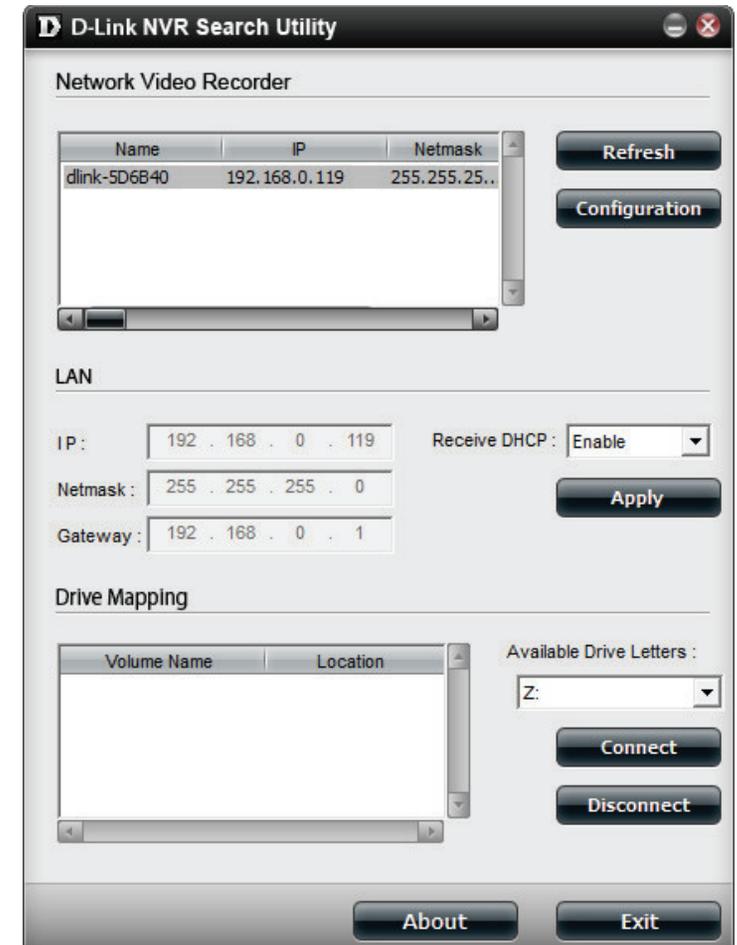
Select an available drive letter. Click **Connect** to map the selected volume. Click **Disconnect** to disconnect the selected mapped volume.

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 **Configuration**. 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.*

D-Link NVR Search Utility Mac

Insert the CD, go to the CD directory, then enter the Mac Utility folder. Click the NVR Search Utility file to run this 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 logging 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.

Receive DHCP:

Select **Enable** to use DHCP for your LAN IP settings, or **Disable** to use static IP.

Apply:

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

Drive Mounting:

Volumes available for mounting are displayed here.

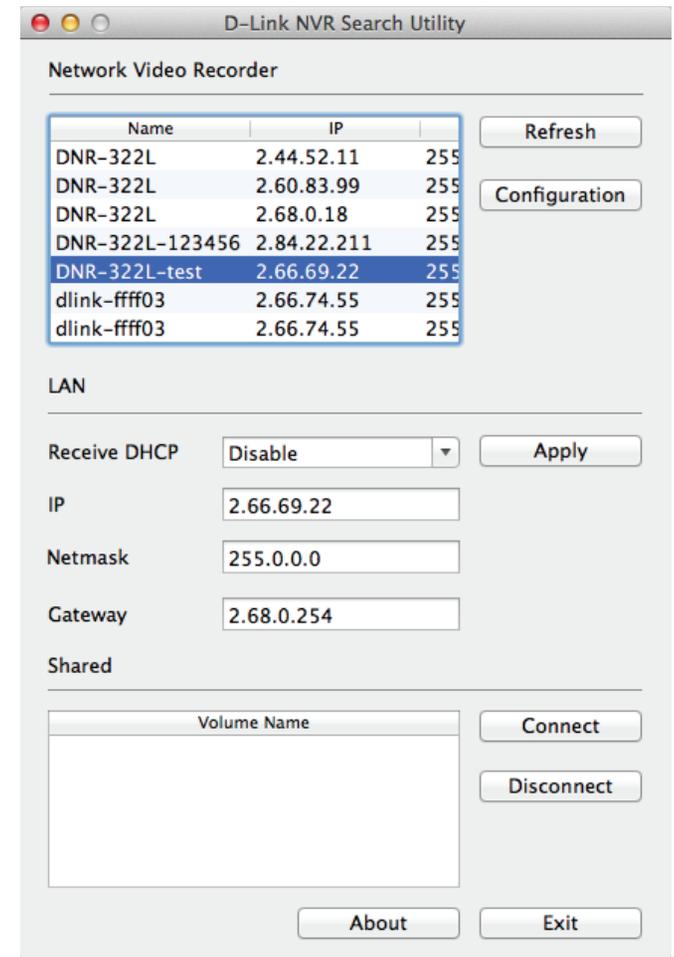
Click **Connect** to mount the selected volume. Click **Disconnect** to unmount the selected volume.

About:

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

Exit:

Click **Exit** to close the utility.

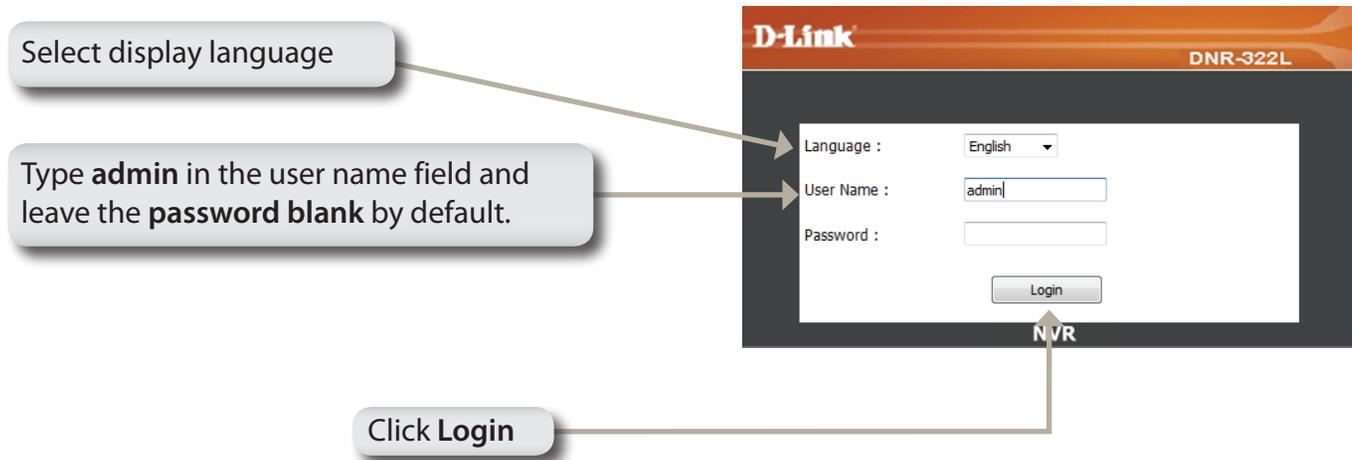


Select the device from the list and click **Configuration**. This will launch the computer's default web browser and direct it to the IP address listed for the device. Make sure the browser is not configured to use a proxy server.

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 and enter the IP address of your NVR. The Login screen will appear:



When logging into 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 52 for more details on using the RAID configurations.

Note: Refer to page 49 for instructions on how to change the password of your admin account.

Configure Hard Drive

If there is one or more HDDs installed, this screen displays the currently installed HDD information.

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

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

HARD DRIVE CONFIGURATION

This section allows you to change the hard drive configuration or to format the newly inserted hard drive. Notice that the data stored in formatted drives will be erased during the process.

Slot	Vendor	Model	Serial Number	Size
R	Seagate	ST3160815AS	6RA0QYDB	160 GB
L	Seagate	ST3160815AS	6RA0PL7N	160 GB

[Next](#) [Skip](#)

HARD DRIVE CONFIGURATION

This section allows you to change the hard drive configuration or to format the newly inserted hard drive. Notice that the data stored in formatted drives will be erased during the process.

Select A RAID Type :

- Standard (Individual Disks)
- JBOD (Linear - Combines Both Disks)
- RAID 0 (Striping - Best Performance)
- RAID 1 (Mirroring - Keeps Data Safe)

[Back](#) [Next](#) [Skip](#)

Auto Search Camera

Please connect your network camera(s) to network and power it on.

NVR will search for your available camera(s) in the local network (LAN) and add them to the NVR List in the NVR automatically.

NVR will use the default login ID **admin** and a blank password to add a new camera(s).

If there are camera(s) found, NVR will start manual recording at the last step.

Note:

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

Click **Exit Wizard** to finish the auto search.

Type **admin** for the username and leave the password field blank.

Click **Login**

D-Link DNR-322L

NVR CAMERA CONFIGURATION

New Camera Configuration

1. The NVR will automatically search for any available network cameras.
2. Cameras will be added in order based on their default ID, password, and name.
3. Once the search finishes, if the NVR has found any cameras, they will now be available for recording and live display.
4. If the wizard does not find any cameras, please first make sure that your cameras are properly connected. Click Live View to try again.

Search Camera...

Add Camera1: D-Link DCS-930 (192.168.1.7)

Add Camera2: D-Link DCS-3430 (192.168.1.3)

Start Manual Recording

Add Camera3: D-Link DCS-5605 (192.168.1.8)

Exit Wizard

Language : English

User Name : admin

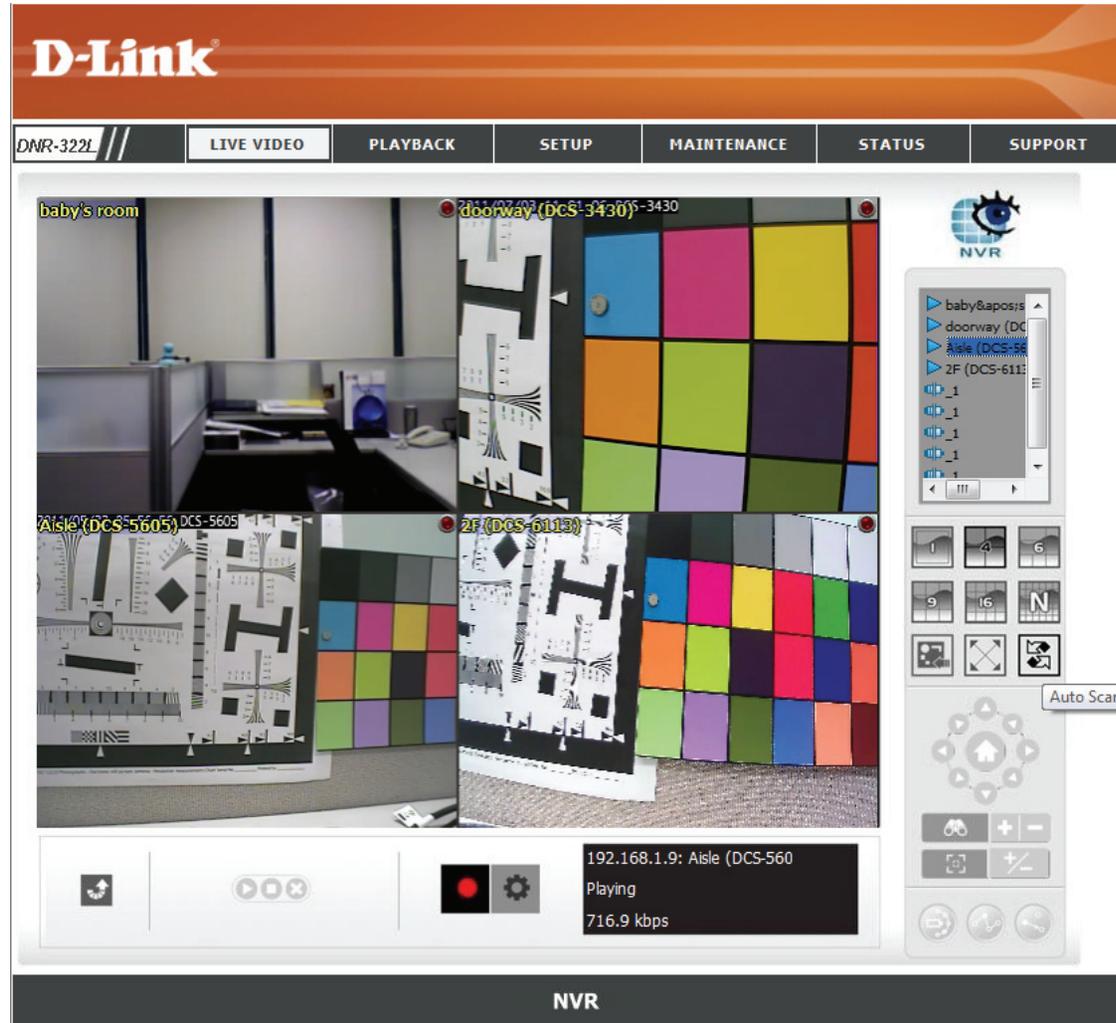
Password :

SSL Login

Login

NVR

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. Event actions can be configured so that an E-mail is sent to you when these actions occur.

The screenshot displays the D-Link NVR web interface. At the top, the D-Link logo is visible. Below it, a navigation menu includes 'DNR-322L', 'LIVE VIDEO', 'PLAYBACK', 'SETUP', 'MAINTENANCE', 'STATUS', and 'SUPPORT'. The 'SETUP' tab is selected, and the 'Wizard' option is highlighted in the left sidebar. The main content area shows the 'WIZARD SETTINGS' section with a message: 'The DNR-322L 2-Bay Network Storage provides a convenient and safe location on the network for storing data and media. The Setup Wizard will let you adjust basic settings for your device.' Below this message is a 'Run Wizard' button. On the right side, there is a 'Helpful Hints..' section with the text: 'These basic settings can be configured individually in other sections.' The footer of the page reads 'NVR'.

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

DNS2: names to IP addresses.

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 a DHCP server, enable NVR DHCP server for easier local network setup.

The screenshot displays the D-Link NVR's network configuration page. At the top, there's a navigation bar with tabs for LIVE VIDEO, PLAYBACK, SETUP (active), MAINTENANCE, STATUS, and SUPPORT. A sidebar on the left lists various setup options like Wizard, Network Setup, Camera Search, etc. The main content area is titled 'NETWORK SETUP' and contains instructions for configuring LAN settings. It features two sections: 'NETWORK SETUP' with radio buttons for 'DHCP Client' (selected) and 'Static IP', and 'PPPoE SETTINGS' with radio buttons for 'Enable' and 'Disable' (selected). Input fields are provided for IP Address, Subnet Mask, Gateway IP Address, DNS1, and DNS2. The PPPoE section includes fields for User Name and Password, and a 'Connection Status' indicator showing 'Not Available'.

Camera Search

Step 1: Click **Search** to search for UPnP cameras. The system will list all the available cameras at this moment. Click the **+** icon to add a camera to your camera list. If the cameras are already added, it will be marked in red.

Step 2: After clicking the icon, the camera setting page will pop up. Click on the camera Setup 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 the cameras are not immediately displayed.

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

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

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

D-Link

DMR-322L // LIVE VIDEO | PLAYBACK | SETUP | MAINTENANCE | STATUS | SUPPORT

Wizard
Network Setup
Camera Search
Camera Setup
Audio and Video
2nd Stream Settings
Live & Playback Setup
Recording Schedule
Auto-Backup Setup
Event Setup
E-Mail Setup
Time and Date
Logout

CAMERA SEARCH
Click **Search** to list out all the UPnP cameras.

CAMERA LIST

Index	Camera Name	Address	Port	Vendor	Model
1	Camera1	172.17.5.43	80	D-Link	DCS-930L
2	Camera2	172.17.5.132	80	D-Link	DCS-930L
3	Camera3	172.17.5.134	80	D-Link	DCS-930L
4	Camera4	172.17.5.97	80	D-Link	DCS-7110
5			80	-- none --	-- none --
6			80	-- none --	-- none --
7			80	-- none --	-- none --
8			80	-- none --	-- none --
9			80	-- none --	-- none --

UPNP SEARCH

Helpful Hints...
To add a camera:
1. Click + to add a camera into the list. The camera setting page appears.
2. Select the camera you want to add.
3. Enter the camera name, user name and password details. Please input user name ("admin" is the user name for every D-Link's cameras) and password in order to access and configure the cameras using the NVR's UI.

Notes
- Some cameras will limit the login authority to the administrator only.
- To add cameras without the UPnP function, please go to **Camera Setup** menu and enter the IP address manually.
- You may not be able to see all the cameras on your first search. It takes time for the devices to respond to UPnP request. Please click search again.

ADD IP CAMERA

Camera Name: Aisle (DCS-5605)
IP Address: 192.168.1.8 Port: 80
Administrator Name: admin Password:
Add to channel: 3 Protocol: HTTP
Vendor: D-Link Model: DCS-5605

CURRENT CAMERA SETTINGS

Index	Camera Name	IP Addr	Vendor	Model
1	baby's room (DCS-5605)	192.168.1.7	D-Link	DCS-930
2	doorway (DCS-3430)	192.168.1.3	D-Link	DCS-3430
3			-- none --	-- none --
4			-- none --	-- none --
5			-- none --	-- none --

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 **Save Settings**.

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

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.

D-Link

DNR-322L // LIVE VIDEO PLAYBACK SETUP MAINTENANCE STATUS SUPPORT

Wizard
Network Setup
Camera Search
Camera Setup
Audio and Video
2nd Stream Settings
Live & Playback Setup
Recording Schedule
Auto-Backup Setup
Event Setup
E-Mail Setup
Time and Date
Logout

CAMERA SETUP

To manually add the camera, enter the IP address of the camera.

Save Settings Don't Save Settings

CAMERA SETUP

Index **Camera 1**

Camera Name

Address Port

Administrator Name Password

Camera Channel Protocol TCP UDP HTTP

Vendor Model

Auto Detection Clear

CAMERA LIST

Index	Camera Name	Address	Port	Vendor	Model
1	Camera1	172.17.5.43	80	D-Link	DCS-930L
2	Camera2	172.17.5.132	80	D-Link	DCS-930L
3	Camera3	172.17.5.134	80	D-Link	DCS-930L
4	Camera4	172.17.5.97	80	D-Link	DCS-7110

Helpful Hints..

The following list briefly describes the **Camera Setup** menu items:

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

Vendor: Displays the manufacturer's name.

Auto Detection: Click to automatically detect all the information (such as camera channel, protocol used, vendor, model number) of the camera.

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: The NVR will display the parameters for the selected camera. You can modify the information on this page.

Camera Name: The name of the camera.

Video Format: Select the video format that 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.

The screenshot shows the D-Link NVR web interface. The top navigation bar includes 'LIVE VIDEO', 'PLAYBACK', 'SETUP' (selected), 'MAINTENANCE', 'STATUS', and 'SUPPORT'. The left sidebar contains a menu with options like 'Wizard', 'Network Setup', 'Camera Search', 'Camera Setup', 'Audio and Video' (selected), '2nd Stream Settings', 'Live & Playback Setup', 'Recording Schedule', 'Auto-Backup Setup', 'Event Setup', 'E-Mail Setup', 'Time and Date', and 'Logout'. The main content area is titled 'AUDIO AND VIDEO' and contains a message: 'You may wish to modify the parameters in this page or directly go to the camera web site. The NVR will display all the necessary information of the selected camera.' Below this message are 'Save Settings' and 'Don't Save Settings' buttons. The 'CAMERA PARAMETER' section includes fields for Name, Video Format (Motion JPEG, MPEG4, H.264), Frame Rate, Resolution, Quality, and an 'Enable Audio' checkbox. The 'CAMERA LIST' section displays a table with columns for Index, Name, Address, Vendor, Model, and Original Web.

Index	Name	Address	Vendor	Model	Original Web
1	Camera1	172.17.5.43	D-Link	DCS-930L	Go to Web
2	Camera2	172.17.5.132	D-Link	DCS-930L	Go to Web
3	Camera3	172.17.5.134	D-Link	DCS-930L	Go to Web
4	Camera4	172.17.5.97	D-Link	DCS-7110	Go to Web
5			-- none --	-- none --	Go to Web

Helpful Hints..
The following list briefly describes the **Audio and Video** menu items:
Video Format: Select the type of format the camera supports.
Frame rate: Select the frame rate of the camera.
Resolution: Select the resolution of the camera.
Quality: Select the image quality of the camera.
Audio: Select Enable Audio to view and enable audio recording.
Note
The system will automatically adjust the frame rate, based on the maximum frame rate of the camera.

Step 3: Click **Save Settings**.

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

2nd Stream Settings

This section will allow you to assign a secondary streaming profile for your cameras, optimized for mobile clients.

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

Step 2: The NVR will display the profiles for the selected camera. You can enable or disable the profiles on this page.

Channel: The channel of the camera.

Camera Name: The name of the camera.

Stream Profile: Enable or disable stream profile for the camera.

Low Profile: The stream profile is under 300 kbps, and is designed for viewing by a single mobile client.

Minimum Profile: The stream profile is under 100 kbps, and is designed for viewing by mobile clients.

The screenshot shows the D-Link NVR web interface. The top navigation bar includes 'LIVE VIDEO', 'PLAYBACK', 'SETUP', 'MAINTENANCE', 'STATUS', and 'SUPPORT'. The 'SETUP' tab is active. The left sidebar lists various settings: Wizard, Network Setup, Camera Search, Camera Setup, Audio and Video, 2nd Stream Settings (selected), Live & Playback Setup, Recording Schedule, Auto-Backup Setup, Event Setup, E-Mail Setup, Time and Date, and Logout.

The main content area is titled '2ND STREAM SETTINGS' and contains the following information:

Stream profile is designed for mobile client and lower fps live stream display. Without stream profile integration, users cannot watch live video on mobile client nor select lower fps stream on liveview. Further, for performance consideration, we fix the resolution and framerate for each brand/series.

Buttons: Save Settings, Don't Save Settings

2ND STREAM SETTINGS

Channel

Camera Name

STREAM PROFILE Enable Disable

STREAM PROFILE

Profile	Format	Frame Rate	Resolution
Low Profile			
Minimum Profile			

CAMERA LIST

Channel	Camera Name	Camera Vendor	Camera Model	Sub-Streaming
1	Camera1	D-Link	DCS-930L	Disable
2	Camera2	D-Link	DCS-930L	Disable
3	Camera3	D-Link	DCS-930L	Disable

Helpful Hints..

The following list briefly describes the **2nd Stream Setting** menu items:

Stream Profile: The default status is Disable. If you want mobile client user to access to this camera, you can select Enable, and click Save button in the middle of the page.

Low Profile: The stream profile, under 300kbps, is designed for mobile client single-view.

Minimum Profile: The stream profile, under 100 kbps, is designed for mobile client multi-view.

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.

CMS Server: Upload your map with camera location to NVR. Max. size 20 KB of BMP and JPG file.

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.

The screenshot shows the D-Link NVR-322L configuration interface. The top navigation bar includes 'LIVE VIDEO', 'PLAYBACK', 'SETUP', 'MAINTENANCE', 'STATUS', and 'SUPPORT'. The 'SETUP' menu is expanded, showing a sidebar with options: Wizard, Network Setup, Camera Search, Camera Setup, Audio and Video, 2nd Stream Settings, Live & Playback Setup (selected), Recording Schedule, Auto-Backup Setup, Event Setup, E-Mail Setup, Time and Date, and Logout.

The main content area is titled 'LIVE AND PLAYBACK SETUP'. It contains the following sections:

- LIVE AND PLAYBACK SETUP:** A message states: "For live viewing and playback over the internet, you need to dedicate a port for the streaming server." Below this are two buttons: 'Save Settings' and 'Don't Save Settings'.
- LIVE STREAMING SERVER:**
 - Port: 5150
 - Maximum Connections: 16
- PLAYBACK SERVER:**
 - Port: 5160
 - Maximum Users: 4
- CMS SERVER:**
 - CMS Server: Enable
 - Port: 5170
 - Maximum Connections: 8
- E-MAP UPLOAD:**
 - File Path: no file selected
- ALLOWED/BLOCKED LIST:**
 - Allowed List: Enable
 - Blocked List: Enable

On the right side of the interface, there is a 'Helpful Hints..' section with the following text:

If NVR is placed behind a NAT router, open the port on the router for the Live and Playback streaming server. The following list briefly describes the **Live and Playback Setup** menu items:

- Maximum Connections:** The maximum number of remote connections is 32.
- Maximum Users:** The maximum number of users for the playback server is 8.
- Allowed List:** Allows only certain IP Addresses to log in for live view and playback.
- Blocked List:** IP addresses in this list will always be blocked.
- Note:** If the maximum number of connections is 16 and if a user connects to 4 cameras, the 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 a schedule.

Manual Record: Manual record will always be the method used to record video as 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.

D-Link

DNR-322L // LIVE VIDEO PLAYBACK SETUP MAINTENANCE STATUS SUPPORT

RECORDING SCHEDULE

You can set up individual cameras to record at specific times, day or night, one time or each day of the week.

Save Settings Don't Save Settings

RECORDING MODE

No Record
 Record by Schedule

Manual Record: **Enabled**

VIDEO DATA

Automatic Overwrite Enable
 Store Videos Store Videos by Schedule 7 Days

RECORDING SCHEDULE

Camera List	Schedule
Camera List	<input checked="" type="radio"/> Day <input type="radio"/> Week 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Camera1	Cam 1 [Schedule bar]
Camera2	Cam 2 [Schedule bar]
Camera3	Cam 3 [Schedule bar]
Camera4	Cam 4 [Schedule bar]
Camera5	Cam 5 [Schedule bar]
Camera6	Cam 6 [Schedule bar]
Camera7	Cam 7 [Schedule bar]
Camera8	Cam 8 [Schedule bar]
Camera9	Cam 9 [Schedule bar]

Helpful Hints..

The following list briefly describes the **Recording Schedule** menu items:

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 duration to store recorded video clips. After the duration, the clips will be purged and cannot be recovered.

Insert: Insert new schedules.

Delete: Delete the selected schedule.

Configure: Modify the schedule and recording mode setting.

Notes

- The **Always Record** option will start recording immediately.
- When configuring the **Motion Detection** event, ensure to setup the motion detection function in your camera first.
- When changing the motion detection settings of your camera, ensure to disconnect the NVR and then re-connect to update the settings in your NVR.

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.

Set up 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 **Configure** 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 the current Day Schedule to other channel(s); copy the current Week Schedule to other day(s) of a week or to other channel(s).

D-Link

DNR-322L

LIVE VIDEO | PLAYBACK | **SETUP** | MAINTENANCE | STATUS | SUPPORT

Wizard
Network Setup
Camera Search
Camera Setup
Audio and Video
2nd Stream Settings
Live & Playback Setup
Recording Schedule
Auto-Backup Setup
Event Setup
E-Mail Setup
Time and Date
Logout

RECORDING SCHEDULE

You can set up individual cameras to record at specific times, day or night, one time or each day of the week.

Save Settings | Don't Save Settings

RECORDING MODE

No Record
 Record by Schedule

Manual Record: **Enabled**

VIDEO DATA

Automatic Overwrite Enable
Store Videos Store Videos by Schedule Days

RECORDING SCHEDULE

Camera List	Schedule
Camera List	<input checked="" type="radio"/> Day <input type="radio"/> Week
...baby's room	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
...doorway (DCS-34)	
...Aisle (DCS-5605)	
...2F (DCS-6113)	
...Camera5	
...Camera6	
...Camera7	
...Camera8	
...Camera9	

Insert | Delete | Configure | Copy

Start Time	End Time	Record	Audio
04:00	23:00	Always	Disabled

Helpful Hints..

The following list briefly describes the **Recording Schedule** menu items:

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 duration to store recorded video clips. After the duration, the clips will be purged and cannot be recovered.

Insert: Insert new schedules.

Delete: Delete the selected schedule.

Configure: Modify the schedule and recording mode setting.

Notes

- The **Always Record** option will start recording immediately.
- When configuring the **Motion Detection** event, ensure to setup the motion detection function in your camera first.
- When changing the motion detection settings of your camera, ensure to disconnect the NVR and then re-connect to update the settings in your NVR.
- When setting up an event, a video motion or digital input can be used to trigger the other cameras. This means that when motion is detected by a camera, it can send out warning signals to the other connected cameras.
- An alternative option is to drag the time bar to change the recording time period. The red bar represents the **Always**

Recording Schedule

Set Recording Schedule Configuration

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

Step 2: Enter pre-record and post-record periods 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 **Insert**.

The screenshot shows a 'Schedule Configuration' dialog box with the following settings:

- Time:** Start Time: 00:00, End Time: 08:00, Pre-record: 5 sec. (Max: 180), Post-record: 5 sec. (Max: 180)
- Audio:** Enable Audio
- Mode:** Always Record, Record on Event
- Motion:** Motion on baby's room, Motion on doorway (DCS-34), Motion on Aisle (DCS-5605)

Buttons: Ok, Cancel

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.

Auto Backup

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

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

Daily Backup Time: The daily scheduled time to start the 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 back up.

Note:

The system backs up recorded video files one by one. If the connection between the unit and the FTP server is normal, but some problems with FTP hinder the system from writing files on FTP, the system would try to back up each file three times before starting to back up the next file. If the connection is lost, the system will wait for the connection, so no file would be skipped.

The screenshot shows the D-Link NVR configuration interface for the DNR-322L model. The interface is divided into several sections:

- Navigation Menu:** LIVE VIDEO, PLAYBACK, SETUP (selected), MAINTENANCE, STATUS, SUPPORT.
- Left Sidebar:** Wizard, Network Setup, Camera Search, Camera Setup, Audio and Video, 2nd Stream Settings, Live & Playback Setup, Recording Schedule, Auto-Backup Setup (selected), Event Setup, E-Mail Setup, Time and Date, Logout.
- Header:** D-Link logo.
- Page Title:** DNR-322L //
- AUTO-BACKUP SETUP:**
 - Backup the recorded data to remote server in a pre-defined daily schedule.
 - Important: The performance of live view and recording will be impacted during backup.
 - Buttons: Save Settings, Don't Save Settings.
- AUTO-BACKUP SCHEDULE:**
 - Auto Backup: Enable
 - Daily Backup Time: 22 : 00
 - Start Time: 08 : 00
 - End Time: 17 : 00
 - select: all / none
 - Camera selection:
 - Camera 1 Camera 2 Camera 3 Camera 4
 - Camera 5 Camera 6 Camera 7 Camera 8
 - Camera 9
- BACKUP SERVER:**
 - FTP Site: ftp.mytest.com
 - FTP Port: 21
 - User Name: mytestftp
 - Password: ••••••
 - Backup to Remote Folder: /mybackup
 - Test Backup Server: Test
- Helpful Hints..:**
 - To backup recorded video to remote server require certain amount of upload bandwidth. It varies with camera numbers and recorded data size.
 - Daily Backup Time: Begin to backup the recorded data of prior day from this time.
 - Start Time: Backup the data of recorded video/audio from start time to end time.
 - Camera: Only selected camera(s) will be backup.
 - Important: During uploading data, NVR performance might be affected with network traffic.
 - If it's not able to backup data of prior day within 24 hours, new backup schedule will start and ignore the rest of data.
- Footer:** NVR

Event Setup

Step 1: Select the event below.

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

Step 2: Click **Add** to set up the actions of the event.

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

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

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

D-Link

DNR-322L // LIVE VIDEO PLAYBACK **SETUP** MAINTENANCE STATUS SUPPORT

EVENT SETUP

Select the camera from the **Camera List**, and enable the event by selecting the checkbox of **Hard Disk Space Full**. Then, select **Add** and then **Email**. Last, select the pre-set email address/ contact who will receive the email notification (action).

Save Settings Don't Save Settings

EVENT ACTION MANAGER

Camera List	Event & Action				
Configure System <input checked="" type="checkbox"/> Hard Disk Space Full	Add Delete Configure <table border="1"> <thead> <tr> <th>Action</th> <th>Options</th> </tr> </thead> <tbody> <tr> <td>Email</td> <td>operator,normal user</td> </tr> </tbody> </table>	Action	Options	Email	operator,normal user
Action	Options				
Email	operator,normal user				

Helpful Hints..

Hard Disk Space Full: When the hard disk space is full, the NVR triggers an action.

E-Mail: When an event occurs, the system will send out e-mail notifications. Please do ensure that you have configured the E-Mail Setup first.

NVR

Backup Server

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

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

User Name: The user name to log into the FTP server.

Password: The password to log into the FTP server.

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

Test Backup Server: After setting up all the information, click **Test FTP** 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 the email server. The default number is 25.

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

Sender: Sender information.

Subject: E-mail subject.

Body of Message: 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 **Add Contact**.

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

D-Link

DNR-322L // LIVE VIDEO PLAYBACK **SETUP** MAINTENANCE STATUS HELP

E-MAIL SETUP
You can set up your SMTP server to send e-mail alerts to notify you when an event occurs.
Save Settings Don't Save Settings

SMTP SERVER

Server Address:

Sender:

Subject:

Body of Message:

SMTP Authentication:

User Name: Password:

CONTACT

User Name: Email:

Add Contact

Name	Email	Delete
admin	admin@gmail.com	<input type="checkbox"/>
operator	operator@yahoo.com	<input type="checkbox"/>
user	user@hotmail.com	<input type="checkbox"/>

Helpful Hints...
The following list briefly describes the SMTP Server settings menu items:
Body of Message: Enter your e-mail message.
SMTP Authentication: Before sending out an e-mail, enter the user name and password for SMTP authentication.
Add Contact: Add a new contact into the 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** to save your entries.

The screenshot shows the D-Link NVR web interface for the DNR-322L model. The navigation menu includes LIVE VIDEO, PLAYBACK, SETUP (selected), MAINTENANCE, STATUS, and SUPPORT. The left sidebar lists various setup options, with 'Time and Date' selected. The main content area is titled 'SYSTEM TIME SETTINGS:' and contains the following information:

- Current Time:** 04:58:55 AM 03/08/2005
- Current Time Zone:** (GMT+08:00) Beijing, Chongqing, Hong Kong, Taipei

Below this, there is a section for 'SET THE DATE AND TIME MANUALLY:' with input fields for Date (03/08/2005) and Time (4:57:27). There are buttons for 'Set Time From My Computer' and 'Save Settings'.

The 'TIMEZONE:' section has a dropdown menu for Time Zone, currently set to '(GMT+08:00) Beijing, Chongqing, Hong Kong, Taipei', and a 'Save Settings' button.

The 'NTP SERVER:' section has an input field for the NTP Server (ntp1.dlink.com) and a dropdown menu for the server type (ntp1.dlink.com), with a 'Save Settings' button.

On the right side, there is a 'Helpful Hints..' section with text: 'Using the NTP option will guarantee the time to be accurate provided that the DNR-322L is connected to the Internet and your DNS values (in SETUP > Network Setup) are valid.'

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 **Finish** 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.

The screenshot shows the D-Link NVR web interface. The top navigation bar includes 'LIVE VIDEO', 'PLAYBACK', 'SETUP', 'MAINTENANCE', 'STATUS', and 'SUPPORT'. The 'MAINTENANCE' tab is selected. The main content area is titled 'USERS SETTINGS' and contains a table with the following data:

User Name	Password
admin	
operator	
user1	

Below the table, there are navigation buttons for 'Add', 'Modify', and 'Delete'. The page also includes a 'Helpful Hints...' section on the right side, which states: 'User passwords must be at least five characters long.'

User List

Change User's Password

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

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

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

Delete A User

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

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

Step 2: Setup User Privileges ✕

Live View Privileges	<input checked="" type="checkbox"/> Channel 1	<input checked="" type="checkbox"/> Channel 2
	<input checked="" type="checkbox"/> Channel 3	<input checked="" type="checkbox"/> Channel 4
	<input checked="" type="checkbox"/> Channel 5	<input checked="" type="checkbox"/> Channel 6
	<input checked="" type="checkbox"/> Channel 7	<input checked="" type="checkbox"/> Channel 8
	<input checked="" type="checkbox"/> Channel 9	<input checked="" type="checkbox"/> PTZ Control
Playback Privileges	<input checked="" type="checkbox"/> Channel 1	<input checked="" type="checkbox"/> Channel 2
	<input checked="" type="checkbox"/> Channel 3	<input checked="" type="checkbox"/> Channel 4
	<input checked="" type="checkbox"/> Channel 5	<input checked="" type="checkbox"/> Channel 6
	<input checked="" type="checkbox"/> Channel 7	<input checked="" type="checkbox"/> Channel 8
	<input checked="" type="checkbox"/> Channel 9	<input type="checkbox"/> Backup Data

Back Next Exit

System

Users can save the NVR configuration to a file and restore it when necessary, such as restarting the NVR in the event of a crash. Reset the NVR to restore all configurations to factory default.

Restart: If the NVR is malfunctioning or crashes unexpectedly, click **Restart** 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 shut down the NVR.

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

Load Configuration: Users can restore the configuration file after resetting to factory default file.

File: Click **Browse** to select the configuration file and restore it by clicking **Load**.

Idle Time: When the administrator enters all the Setup pages, except the Live Video and Playback Page, the NVR will keep track of the idle time when the user is not active. If this inactive period reaches a certain time, the user will be logged out and will have to log in again for security purposes. Change the period of idle time here.

The screenshot shows the D-Link NVR web interface. The top navigation bar includes 'LIVE VIDEO', 'PLAYBACK', 'SETUP', 'MAINTENANCE', 'STATUS', and 'SUPPORT'. The 'MAINTENANCE' page is selected, displaying the following sections:

- SYSTEM SETTINGS :**
 - The System Settings section allows you to restart the system, shutdown the system, or restore the device to the factory default setting. Restoring the unit to factory settings will erase all settings, including any rules that you have created.
 - The current system settings can be saved as a file onto the local hard drive. The saved file can be uploaded into the unit.
- RESTART :**
 - System Restart.
- DEFAULTS :**
 - Restore To Factory Default Settings.
- SHUTDOWN :**
 - System Shutdown.
- CONFIGURATION SETTINGS :**
 - Save Configuration Settings.
 - Load Configuration Settings.
- IDLE TIME :**
 - Account Inactivity Timer (Minutes)

The bottom of the page displays 'NVR'.

RAID

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

Choose from four different hard drive configurations in this section. Begin by clicking **Set RAID Type and Re-Format**.

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.

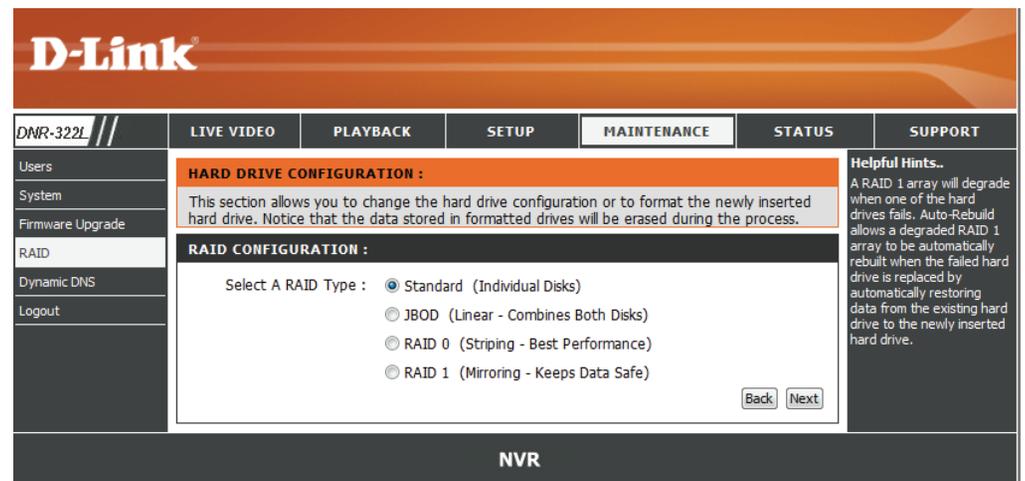
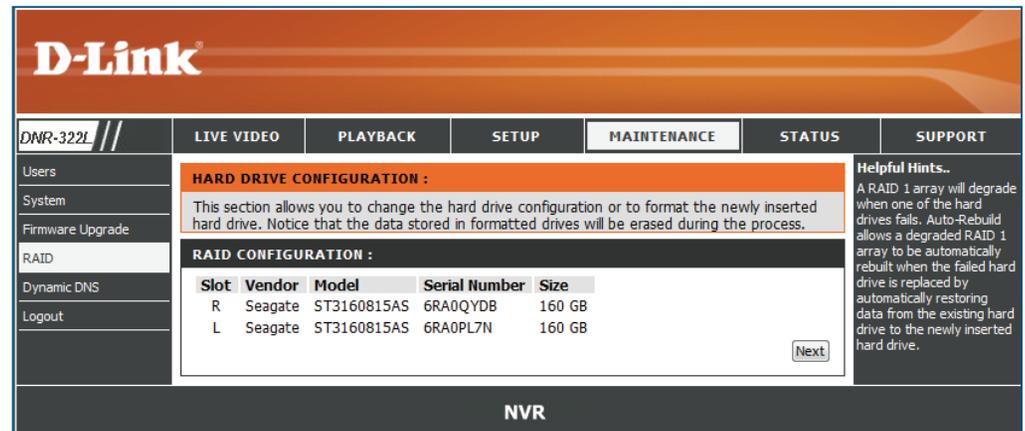
Note:

Only Standard mode can create the Volume2, which is available as a File (Samba) Server. Use the NVR Search utility to 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 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.

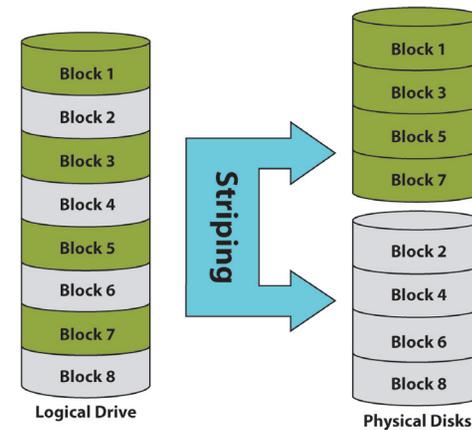
RAID 0 RAID 0 provides data striping, which spreads out blocks of data over both drives, but does not provide data redundancy.

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

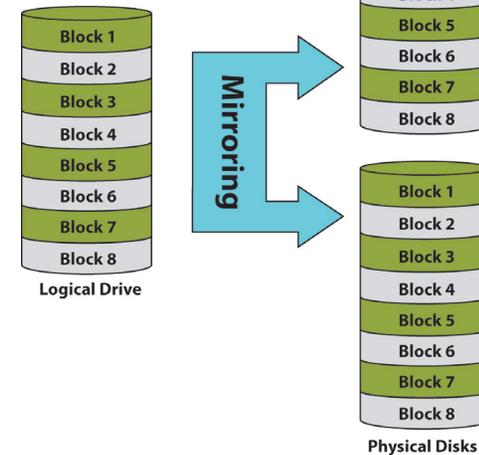
RAID 1 RAID 1 provides mirroring over both disks, with the same read/write speed of a single disk. A RAID 1 array can only be as large as its smallest member disk.

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

RAID 0



RAID 1



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.

D-Link

DNR-322L // LIVE VIDEO PLAYBACK SETUP MAINTENANCE STATUS SUPPORT

Users
System
Firmware Upgrade
RAID
Dynamic DNS
Logout

DDNS SETTINGS :

The Dynamic DNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (www.whateveryounameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter your host name to connect to your NAS no matter what your IP address is.

Sign up for D-Link's Free DDNS service at www.DLinkDDNS.com.

Save Settings Don't Save Settings

DDNS SETTINGS :

Dynamic DNS Enable Disable
 Server Address <<
 Host Name
 Username or Key
 Password or Key
 Verify Password or Key
 Status

Helpful Hints..
To use this feature, you must first have a Dynamic DNS account from one of the providers in the drop down menu.

NVR

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 **Browse** 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.

The screenshot displays the D-Link web interface for the DNR-322L device. The top navigation bar includes the D-Link logo and tabs for LIVE VIDEO, PLAYBACK, SETUP, MAINTENANCE (selected), STATUS, and SUPPORT. A left sidebar menu lists various settings: Users, System, Firmware Upgrade (highlighted), RAID, Dynamic DNS, and Logout. The main content area is titled 'FIRMWARE UPGRADE :'. It contains a message: 'A new firmware upgrade may be available for your DNR-322L. It is recommended to keep your DNR-322L firmware up-to-date to maintain and improve the functionality and performance of your storage device. Click [D-Link Support Page](#) to check for the latest available firmware. To upgrade the firmware on your DNR-322L, please download and save the latest firmware version from the [D-Link Support Page](#) to your local hard drive. Locate the file on your local hard drive by clicking the Browse button. Once you have found and opened the file using the browse button, click the Apply button to start the firmware upgrade.' Below this is a section for 'CURRENT FIRMWARE INFORMATION :'. It shows 'Current NAS Firmware Version : 1.00' and 'Firmware Date : 06/29/2011'. The 'Firmware Path' field is empty, with 'Browse...' and 'Apply' buttons next to it. A 'Helpful Hints..' section on the right explains that firmware updates are released periodically to maintain and improve functionality, and advises checking the support site for updates. The bottom of the page features the 'NVR' label.

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 network configuration between cameras and NVR. If the bit rate is too high, it will cause the Live Video display to slow down or lag. If this is the case, 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 the current bit rate. This may change each time a user refreshes this page.

D-Link

DNR-322L // LIVE VIDEO PLAYBACK SETUP MAINTENANCE STATUS SUPPORT

Camera Status

CAMERA STATUS

This page displays the camera and recording status of the camera.

CAMERA STATUS

Index	Name	Address	Connection Status	Recording Status	Frame Rate	Bit Rate
1	baby's	192.168.1.7	Connected Disconnect	Manual Recording Recording	30.5 fps	2833.3 Kbps
2	doorw	192.168.1.3	Connected Disconnect	Manual Recording Recording	9.4 fps	881.8 Kbps
3	Aisle (C	192.168.1.8	Connected Disconnect	Manual Recording Recording	9.9 fps	981.9 Kbps
4	2F (DC	192.168.1.5	Connected Disconnect	Manual Recording Recording	1.0 fps	1092.0 Kbps
5			Disconnect Connect	Manual Recording Recording	0.0 fps	0.0 Kbps
6			Disconnect Connect	Manual Recording Recording	0.0 fps	0.0 Kbps
7			Disconnect Connect	Manual Recording Recording	0.0 fps	0.0 Kbps
8			Disconnect Connect	Manual Recording Recording	0.0 fps	0.0 Kbps
9			Disconnect Connect	Manual Recording Recording	0.0 fps	0.0 Kbps
						5789.1 Kbps

Last Update at Monday, July 11, 2011 6:10:57 PM

DISK STATUS

Total Hard Drive Capacity: 152805 MB
 Unused Space: 143548 MB
 Estimated Total Recording Time: 2 day(s) and 14 hour(s)
 Estimated Remaining Recording Time: 2 day(s) and 10 hour(s)

Helpful Hints...

The following list briefly describes the Camera and Recording Status menu items:

Connection Status: Click Connect or Disconnect to change the connection status.

Recording Status: Set the recording schedule of the camera.

Frame Rate: Displays the frame rate of the camera.

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

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, and used and remaining drive space.

The screenshot shows the D-Link NVR web interface. The top navigation bar includes 'LIVE VIDEO', 'PLAYBACK', 'SETUP', 'MAINTENANCE', 'STATUS', and 'SUPPORT'. The 'STATUS' tab is active. On the left, a sidebar menu lists 'Camera Status', 'System Info', 'Logs', 'NVR.log', and 'Logout'. The main content area displays the following information:

SYSTEM INFORMATION :
View a summary of the device information here.

LAN INFORMATION :

- IP Address : 192.168.1.9
- Subnet Mask : 255.255.255.0
- Gateway IP Address : 192.168.1.1
- Mac Address : 00:32:20:00:01:01
- DNS1 : 192.168.1.1
- DNS2 :

DEVICE INFORMATION :

- Workgroup : workgroup
- Name : dlink-000101
- Description : DNR-322L
- System Temperature : 113°F/45°C
- Current Rx/Tx : 2207206/1771648
- System Up Time : 0 Day 0 Hours 51 Minutes

VOLUME INFORMATION :

- Volume Name : Volume_1
- Volume Type : Standard
- Total Hard Drive Capacity : 156474 MB
- Used Space : 9486 MB
- Unused Space : 146988 MB
- Volume Name : Volume_2
- Volume Type : Standard
- Total Hard Drive Capacity : 155440 MB
- Used Space : 148237 MB
- Unused Space : 7203 MB

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

The screenshot displays the D-Link NVR web interface. The top navigation bar includes 'LIVE VIDEO', 'PLAYBACK', 'SETUP', 'MAINTENANCE', 'STATUS', and 'SUPPORT'. The 'STATUS' tab is active, showing a 'LOGS' section. A 'Clear Log' button is present above a table of system events. The table has columns for 'Date', 'Time', and 'Info'. The events listed are:

Date	Time	Info
Mar 7	20:13:56	System has been restored to factory default settings.
Mar 7	20:15:03	System Time Is Updated By RTC.
Mar 7	20:15:15	Set Fan Speed To "Stop".
Mar 7	20:15:27	System is rebooted or power up successfully.
Mar 7	20:16:59	admin logged in.
Mar 7	20:19:37	Set System Time.
Mar 8	04:20:32	admin logged in.
Mar 8	04:21:35	Set Fan Speed To "Low".
Mar 8	04:44:39	admin logged in.
Mar 8	04:44:59	Admin password has been modified.

At the bottom of the log table, there is a pagination control showing 'Page 1 of 2' and 'Displaying 1 to 10 of 14 items'. A 'Helpful Hints' sidebar on the right suggests checking logs for system/hard drive errors and unauthorized NAS usage.

NVR Log

This NVR Log displays the event log information.

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

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

The screenshot shows the D-Link NVR web interface. The top navigation bar includes 'D-Link', 'DNR-322L', and tabs for 'LIVE VIDEO', 'PLAYBACK', 'SETUP', 'MAINTENANCE', 'STATUS', and 'SUPPORT'. The 'STATUS' tab is active.

On the left sidebar, there are links for 'Camera Status', 'System Info', 'Logs', 'NVR log', and 'Logout'. The 'NVR log' link is selected.

The main content area is divided into two sections:

- NVR LOG:** A message box stating 'The screen displays the system event list of your NVR.'
- NVR LOG INFORMATION:** A table with a search filter set to '20110711' and a 'Query' button. The table shows two entries:

Date	Time	Log
2011-07-11	18:12:07	Start manual recording
2011-07-11	18:12:05	NVS System Started
- NVR EVENT LOG INFORMATION:** A section with a search filter set to '20110711' and a 'Query' button. It shows a message: 'There are no NVR logs yet...'

On the right side, there is a 'Helpful Hints..' section with the following text:

The following list briefly describes the NVR Event list items:

- NVR Log:** Displays the log information of NVR, for example stop recording or NVR system start.
- NVR Event Log:** Displays the event log information, for example motion detection or when a camera connection is lost.

The bottom of the page displays 'NVR'.

Support

The NVR Help page provides a list of support topics.

The screenshot displays the D-Link NVR web interface. At the top, the D-Link logo is visible. Below it, a navigation bar contains the following tabs: LIVE VIDEO, PLAYBACK, SETUP, MAINTENANCE, STATUS, and SUPPORT. The SUPPORT tab is currently selected. On the left side, there is a vertical menu with the following items: Menu, Live Video, Playback, Setup, Maintenance, Status, and Logout. The main content area is titled "HELP MENU" and contains a list of support topics organized into sections:

- HELP MENU**
 - Live Video
 - Playback
 - Setup
 - Maintenance
 - Status
- LIVE VIDEO**
 - Live Video
- PLAYBACK**
 - Playback
- SETUP**
 - Wizard
 - Network Setup
 - Camera Search
 - Camera Setup
 - Audio and Video
 - Live & Playback Setup
 - Recording Schedule
 - Auto-Backup Setup
 - Event Setup
 - E-Mail Setup
 - Time and Date
- MAINTENANCE**
 - Users
 - System
 - Firmware Upgrade
 - RAID
 - Dynamic DNS
- STATUS**
 - Camera Status
 - System Info
 - Logs
 - NVR log

At the bottom of the page, the text "NVR" is displayed.

Live Video

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

Set up Live View

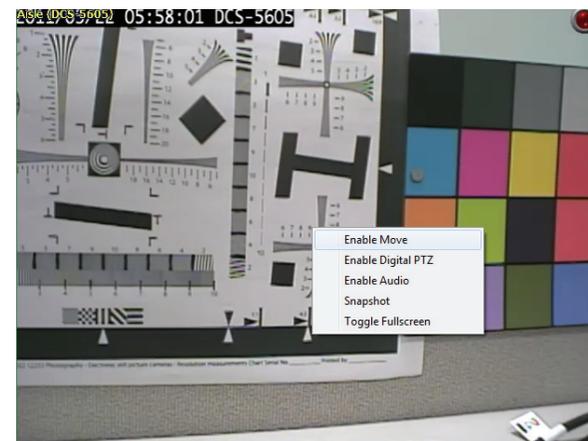
Step 1: Click **LIVE VIDEO** at the top of the menu.

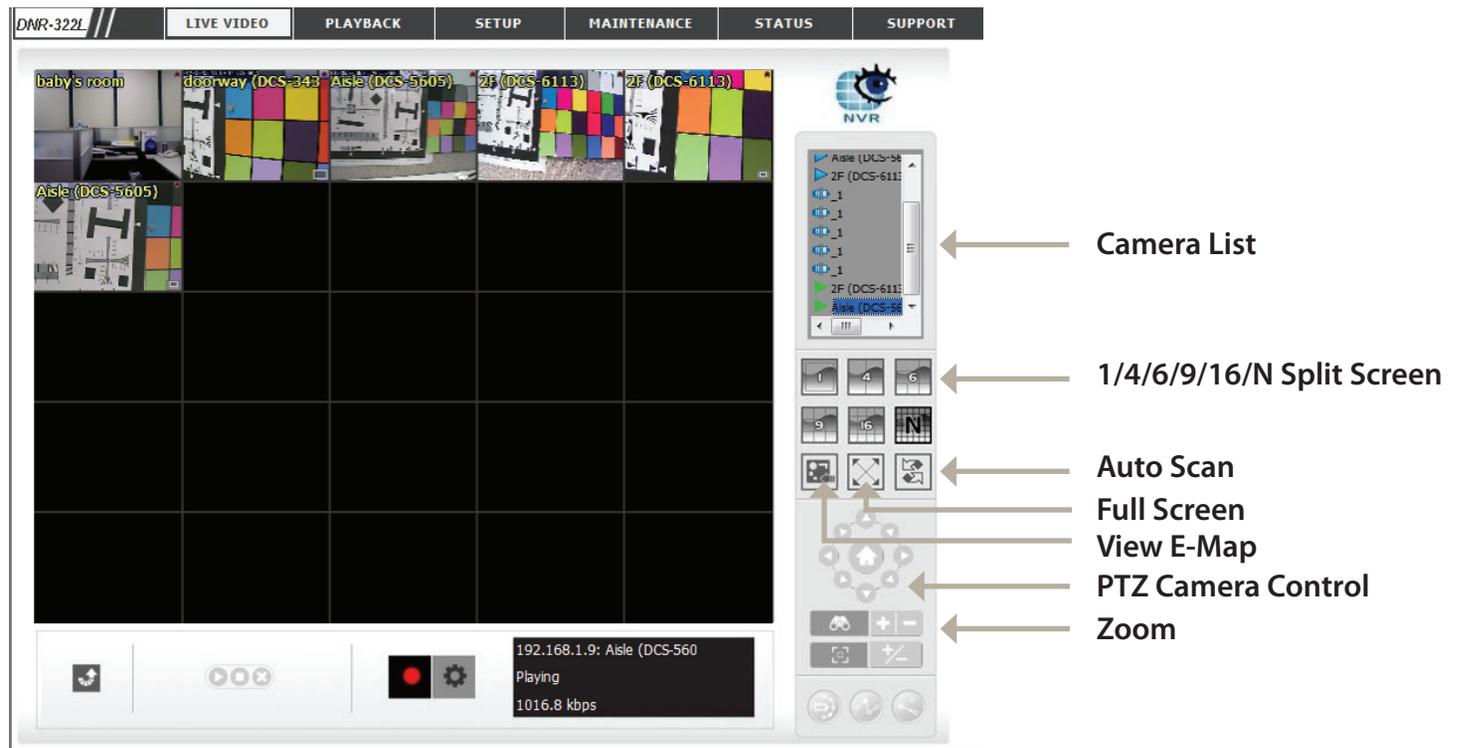
Step 2: Select a camera(s) from the camera list on the right and then drag it to the location to where you wish the image to be displayed.

Step 3: Users can change the video display position by dragging 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 click on **Enable Digital PTZ**. Click 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 support 9 channels, other channels are the Duplicated channel.

View E-Map:

Display your emap file. Max. size 20 KB as a 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 a 4-split screen on the live view, while connecting 16 channels to the system. With autoscan function, you are able to see all 16 channels by turns.

Full Screen:

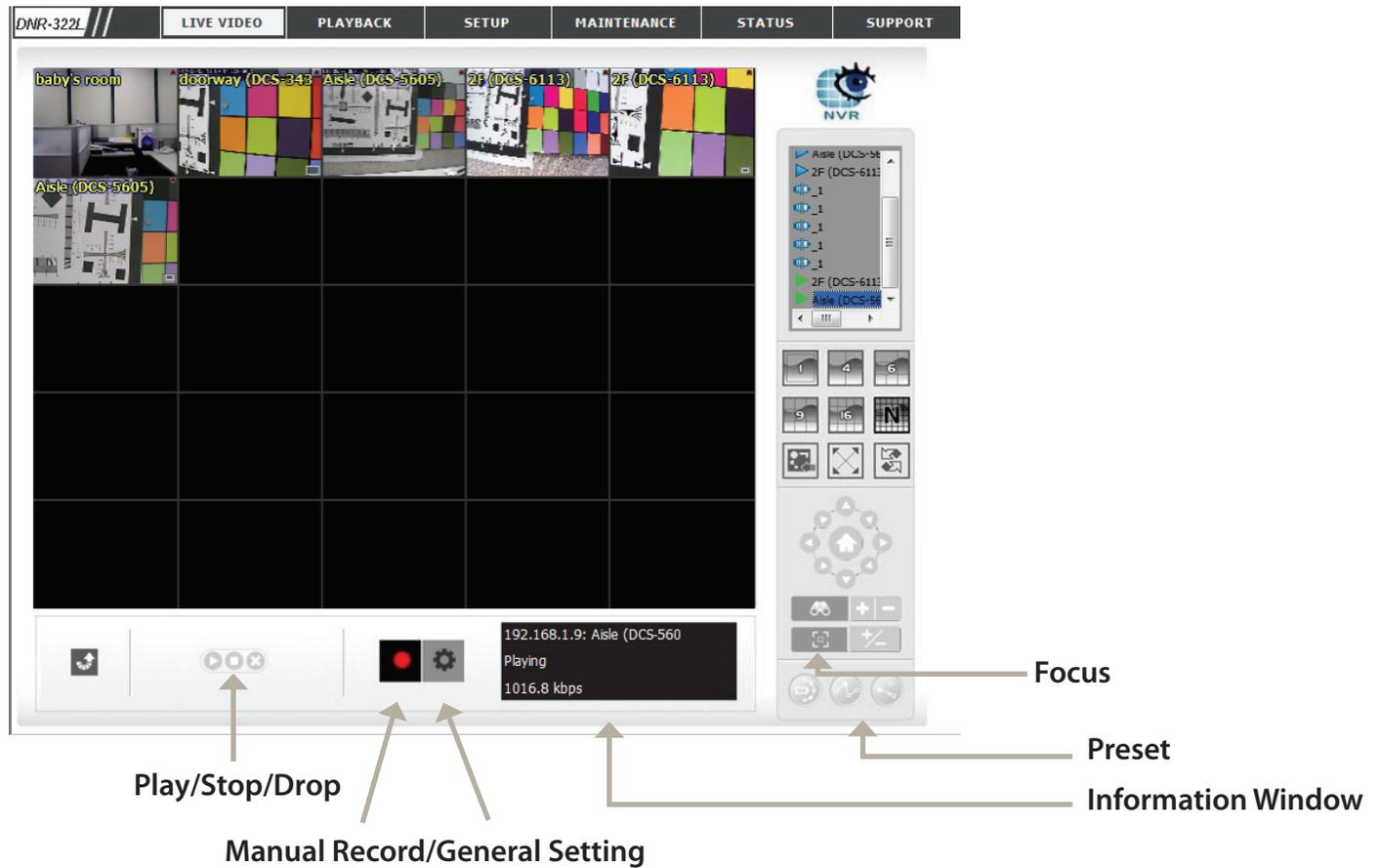
Select to display the video with full screen. Press the **ESC** key on the keyboard to return to normal display.

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

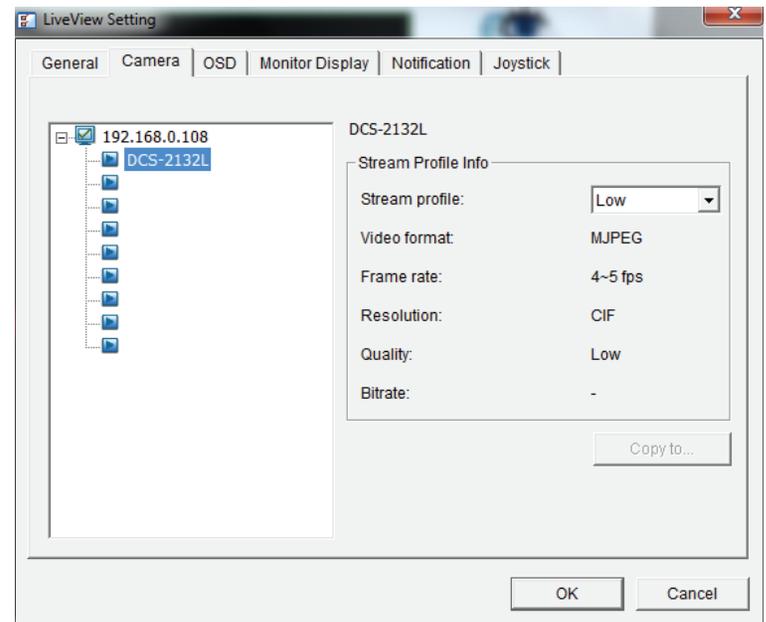
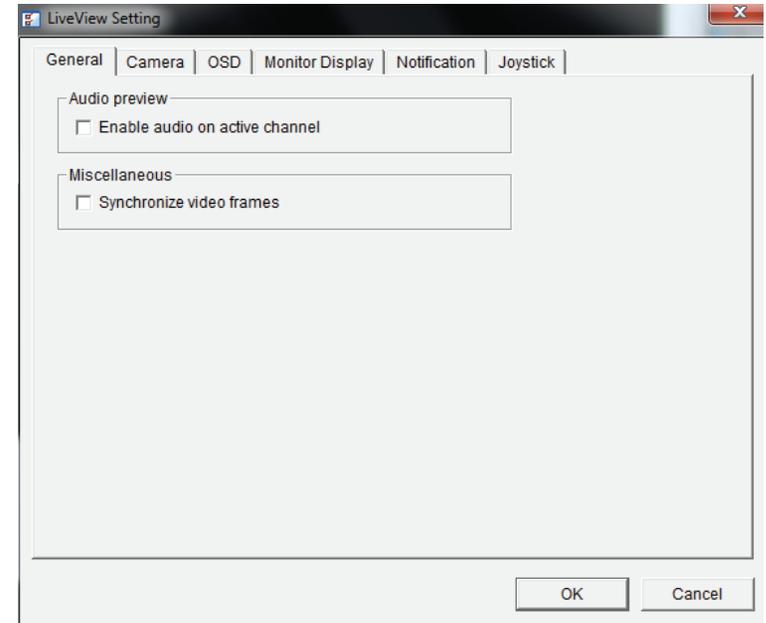
1. Check the **Enable audio on active channel** option to enable audio streaming on active channel. This function synchronizes with right click ing on the camera to enable audio.
2. Check **Synchronize video frames** to avoid the tearing problem from occurring in the video display while increasing the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

Camera Setting

The DNR-322L allows you to adjust the stream for remote live streaming. Lowering the streaming profile allows for more efficient transmission and conserves bandwidth.

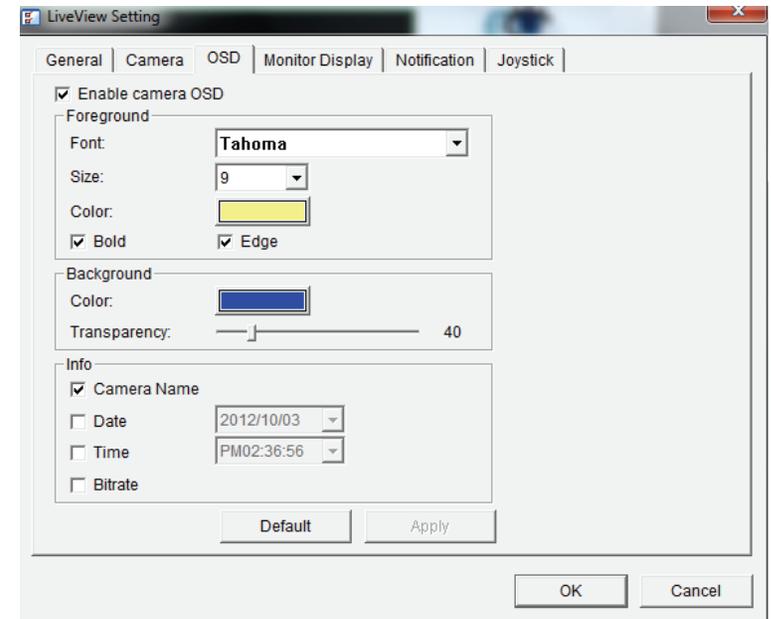
Note: Stream Profile is the second stream of the camera. Not all cameras feature a second stream.

1. Select your camera device from the list on the left.
2. Select from **Original**, **Low**, and **Minimum** for the **Stream Profile**. **Low** streams at a rate of under 300 kbps while **Minimum** streams at under 100 kbps. If you would like to use this option for another camera on the list, click **Copy To**.
3. Click **OK** to save this setting.



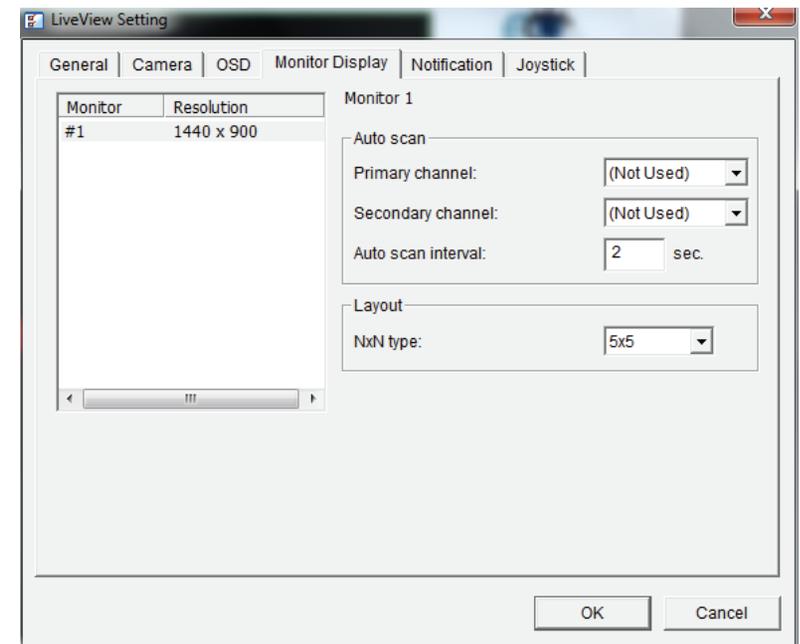
OSD (On-screen display) Setting

1. Check the **Enable camera OSD** option.
2. Set the foreground and background settings of the OSD.
3. Select which types of information will be displayed on the screen.
4. Click **Apply** to preview the result.
5. Click **Default** to go 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 a message for detected camera events on the correspondent screen.
3. Check **Popup system event** to have a system event message dialog pop up as a warning when a system event occurs.

Set up Joystick Control

The DNR-322L supports USB joystick control.

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

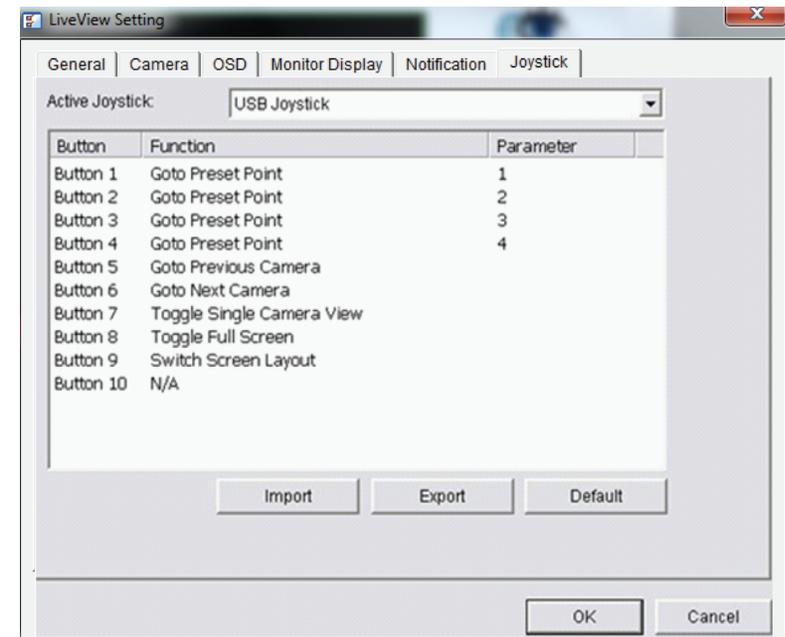
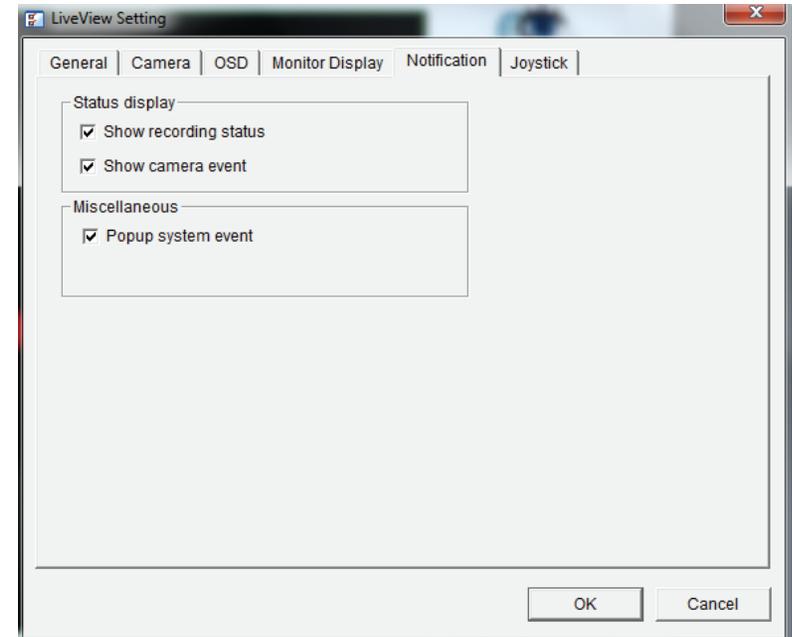
Parameter: Choose the preset point from the drop-down menu.

Default: Click to back to default setting.

Import: Click to import the settings.

Export: Click to export the settings.

After you have finished setting up the joystick, you can use it to control the PTZ camera in the Live View window.



Multiple view

You can right-click on the 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 a green indicator. Combine this function with digital PTZ so users are able to enlarge different spots and view them in different channels. This whole view can be recorded.

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

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



Playback

This feature allows you to search and play back the recorded video.

Play the Recorded Video

Step 1: Be sure that you have set the schedule/recording event first.

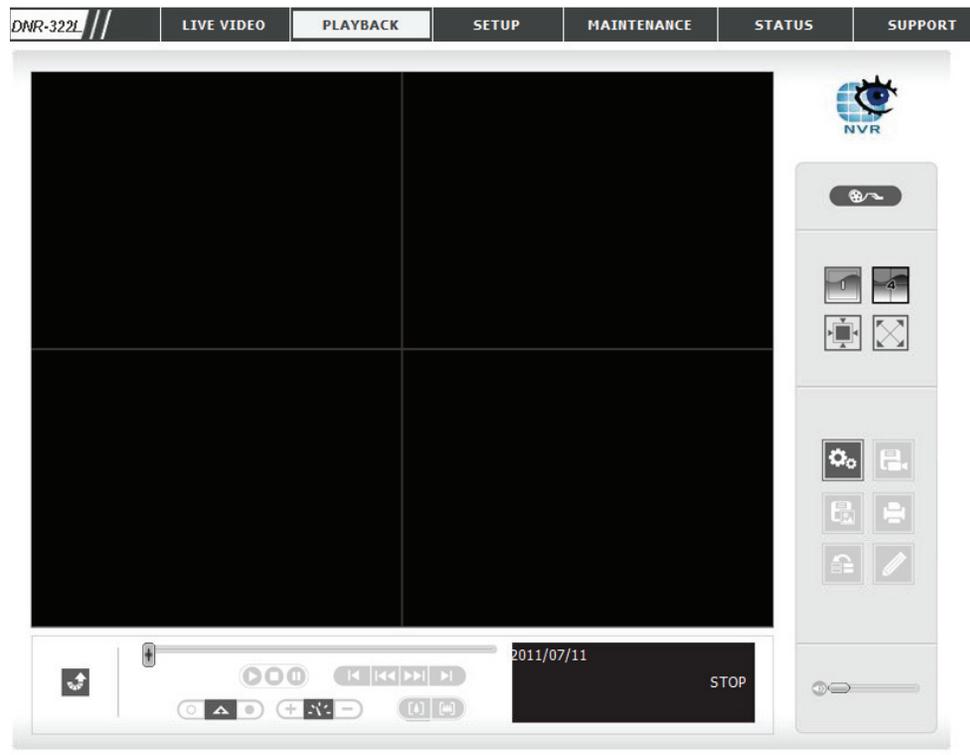
Step 2: Click the **PLAYBACK** tab at the top of the menu.

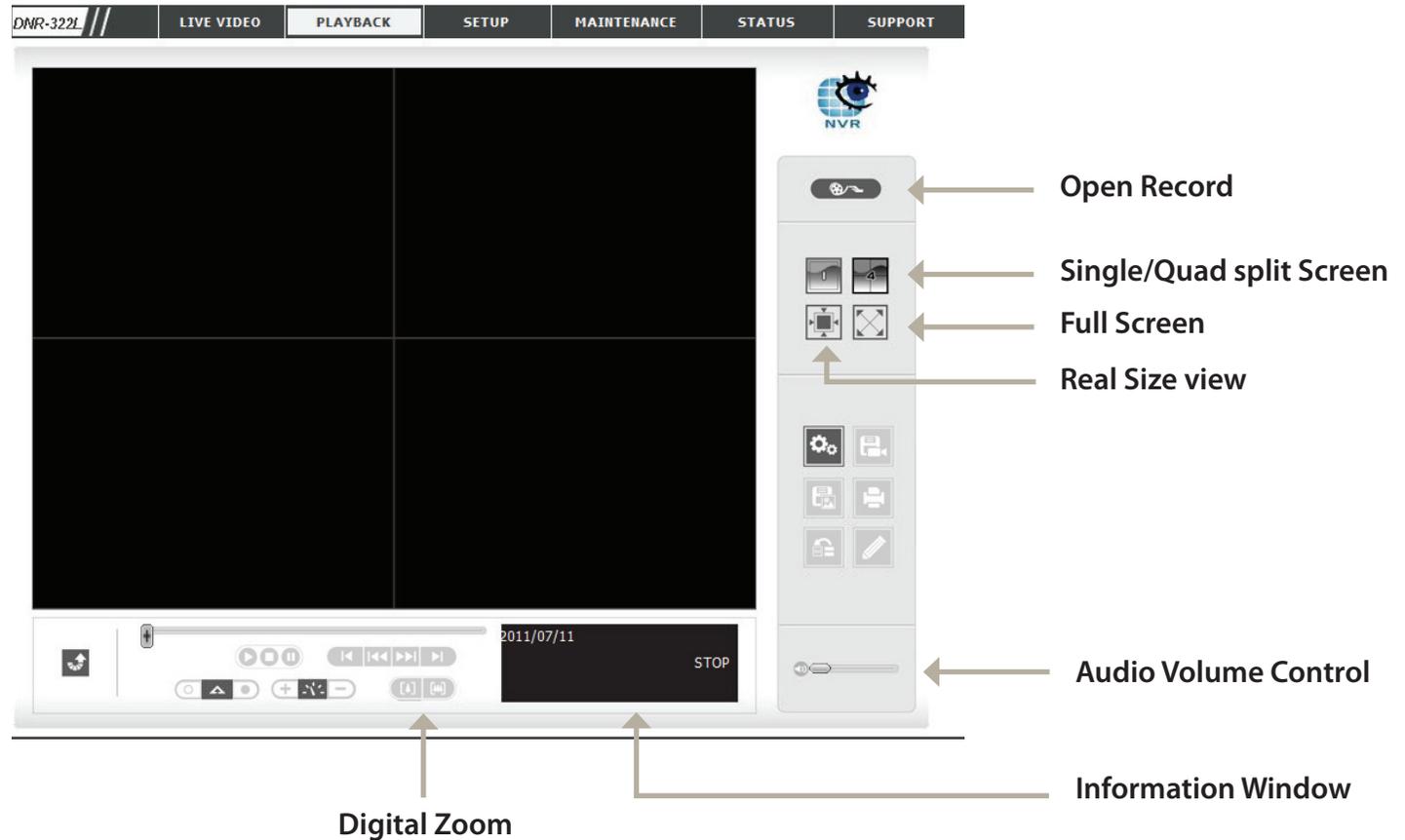
Step 3: Click the **Open Record** button.

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 of.

Step 5: Highlight the video records that you would like to review.

Step 6: Click the **OK** button.





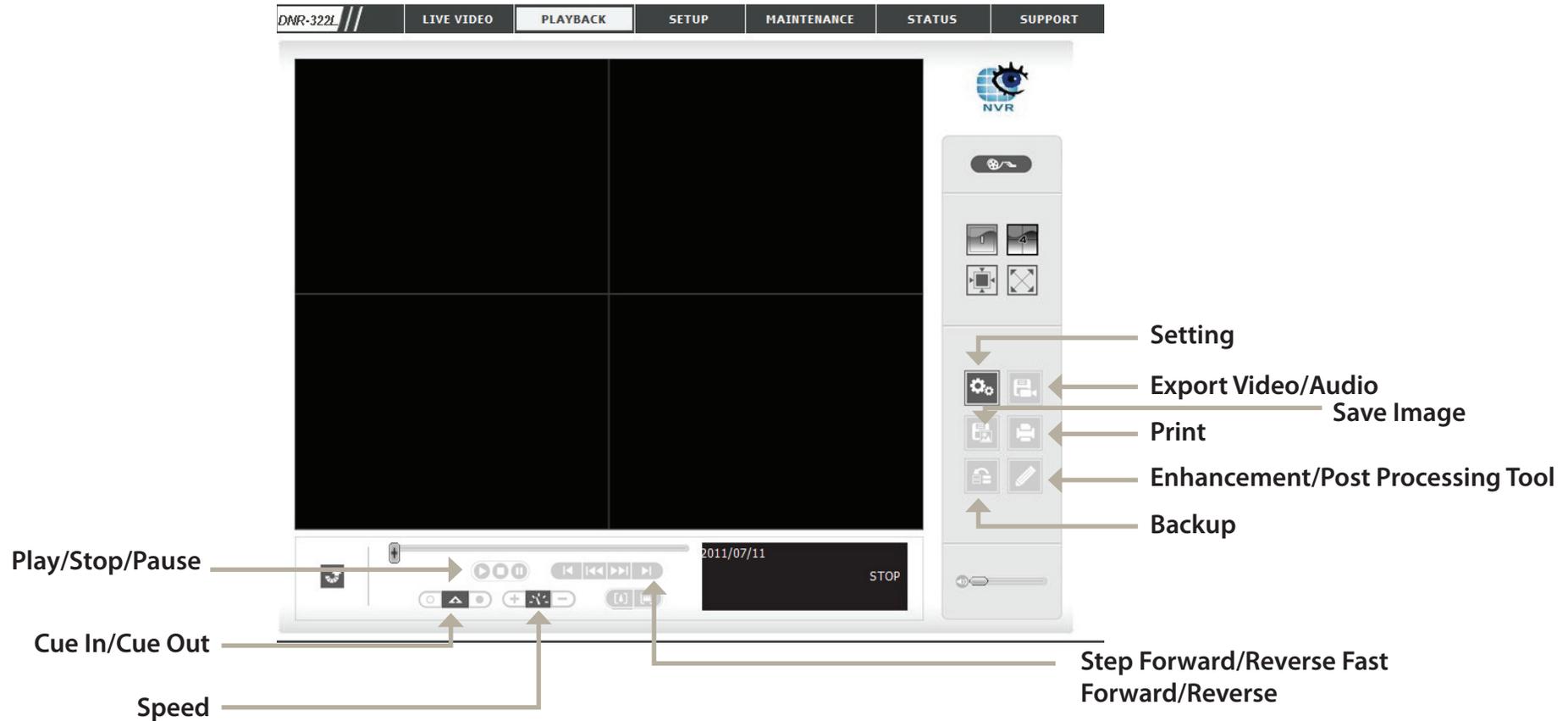
Single/Quad Split Screen: User may view a single camera or 4 cameras at a time. The DNR-322L only supports 1 camera playback.

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.

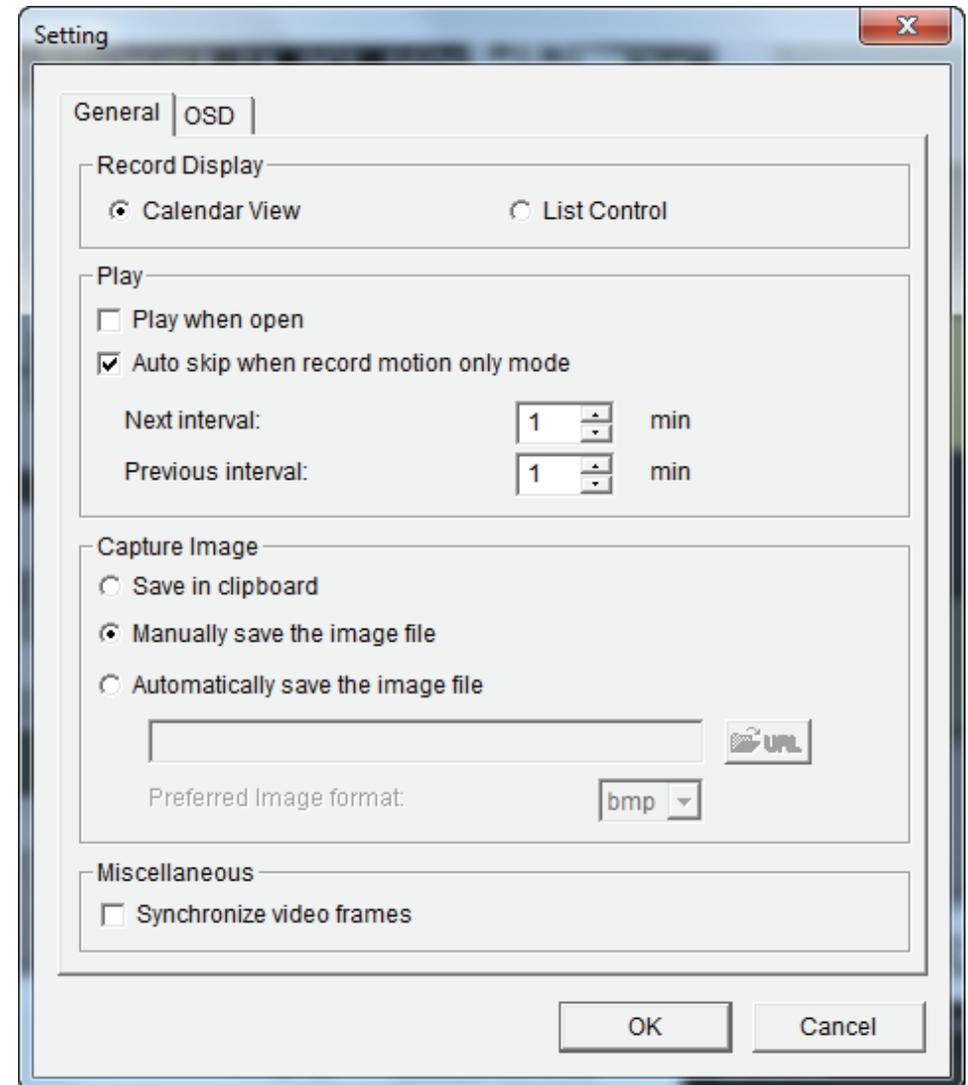
Play

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.

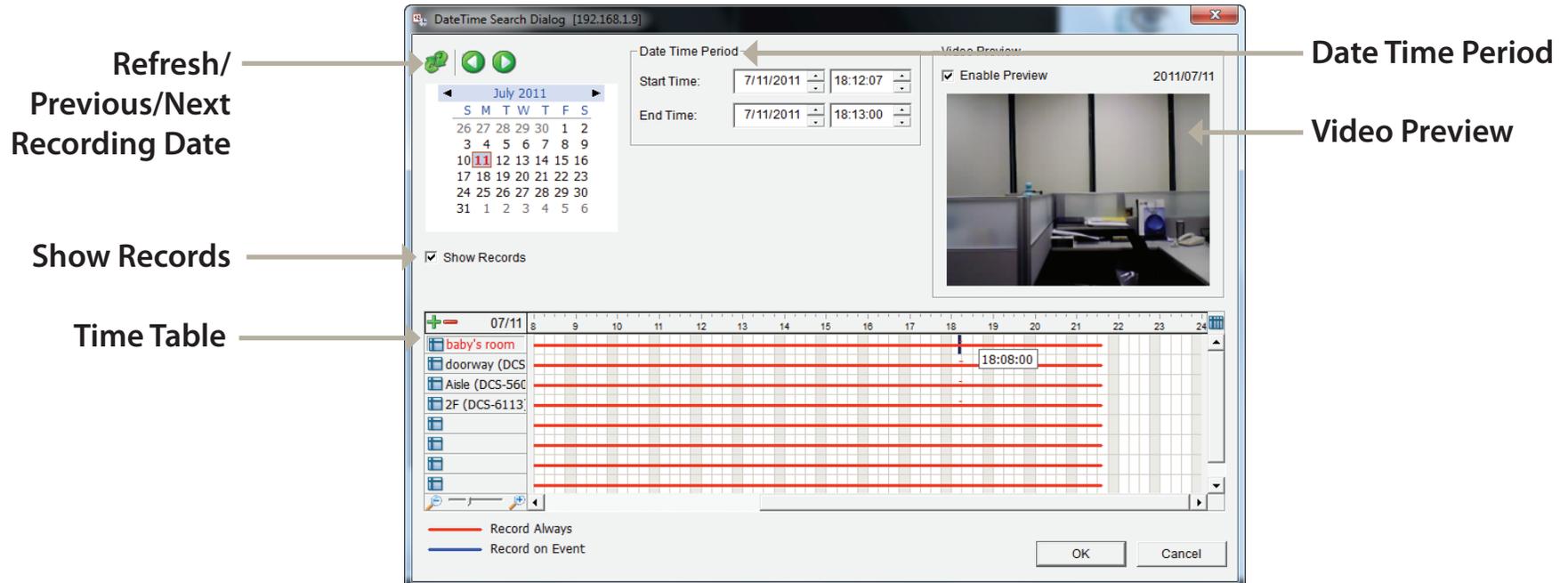
Automatically save the image file: By pre-setting a path/URL and the image format, the system will automatically save the image accordingly when you click the **Save Image** button in the control panel.

Miscellaneous

Check the **Synchronize video frames** option 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.
Note: The time period cannot exceed two days.

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 timetable. 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 only be applied to the selected channel.

Apply all channels: The settings will only be 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.

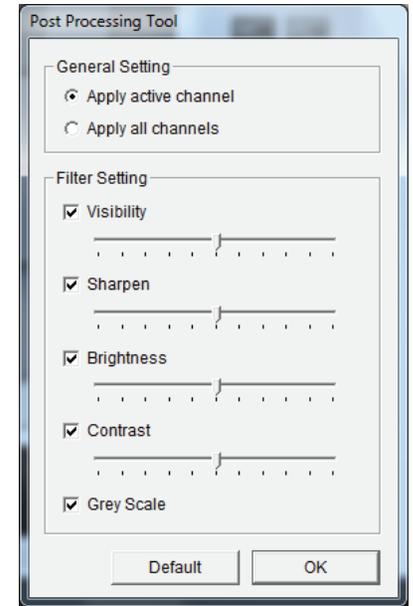
Contrast: Select this option and move the slider control to the right or left to increase or decrease the contrast.

Greyscale:

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

OK: Reset settings to their defaults.

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 **Save Video**.

Step 3: Choose the folder where you would like to save the file.

Step 4: Input the file name and click **Save**.

Step 5: Choose the export format.

Step 6: Choose the user profile.

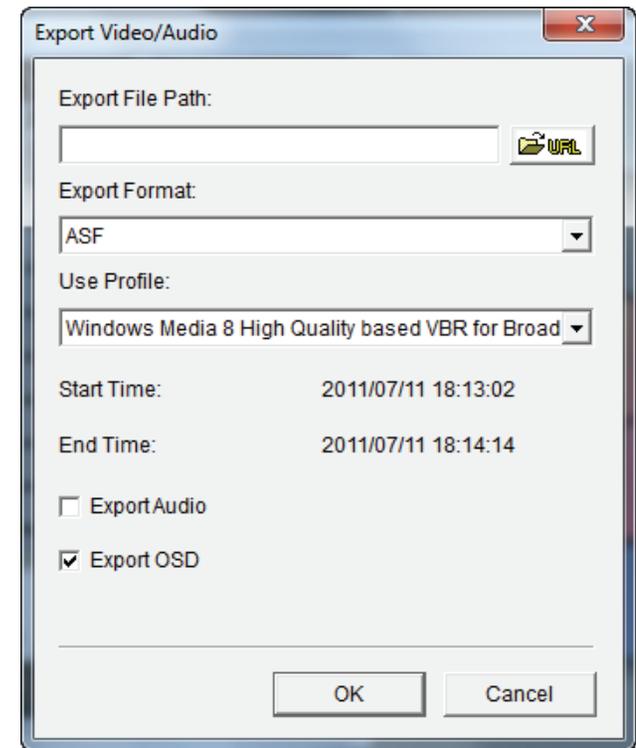
Step 7: Select the **Export Audio** option if the video has audio and you would like to export with the video.

Step 8: Click **OK**.



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 **Save Image** when the desired image is shown on the screen.

Step 3: Click **Save Image** again to choose the folder where you would like to save the file to.

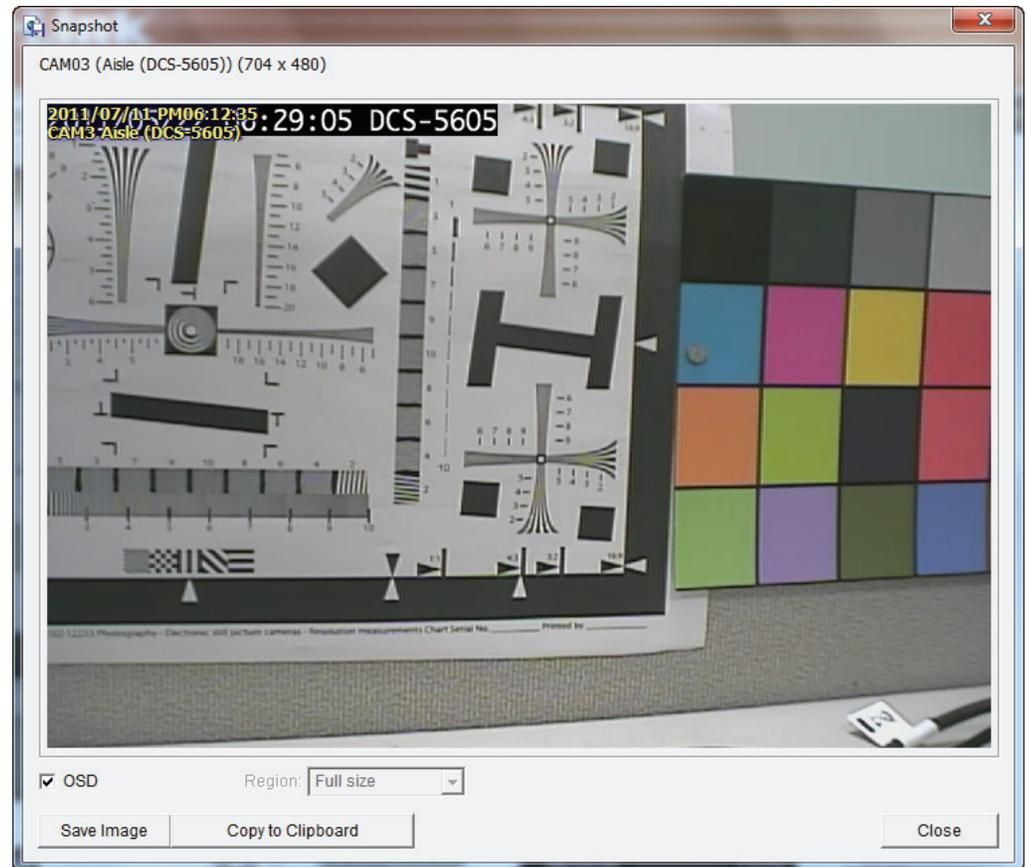
Step 4: Choose the desired image format (BMP or JPEG).

Step 5: Input the file name.

Step 6: Click **Save**.

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, you can choose to print a selected image.

Step 2: Click **Print** when the desired image is shown on the screen.

Step 3: Select your desired print settings.

Page Setting

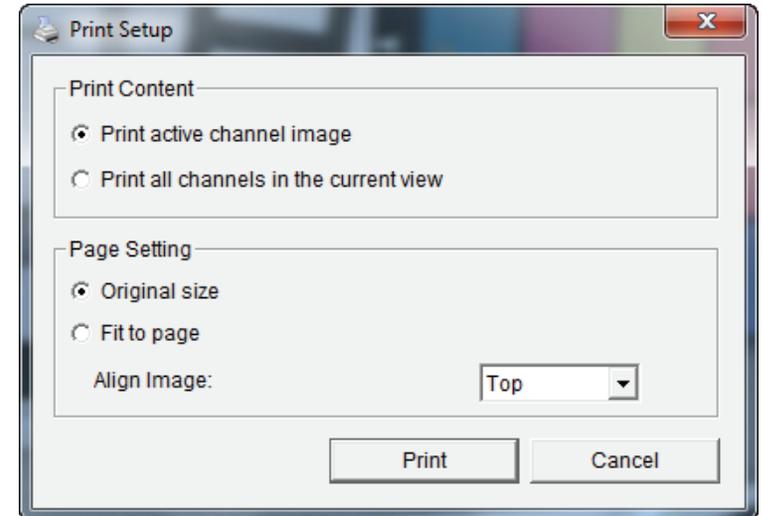
Print Content: Print the image from currently selected channel or all the channels shown on the screen.

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 **Print**.



Back up 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 **Backup**.

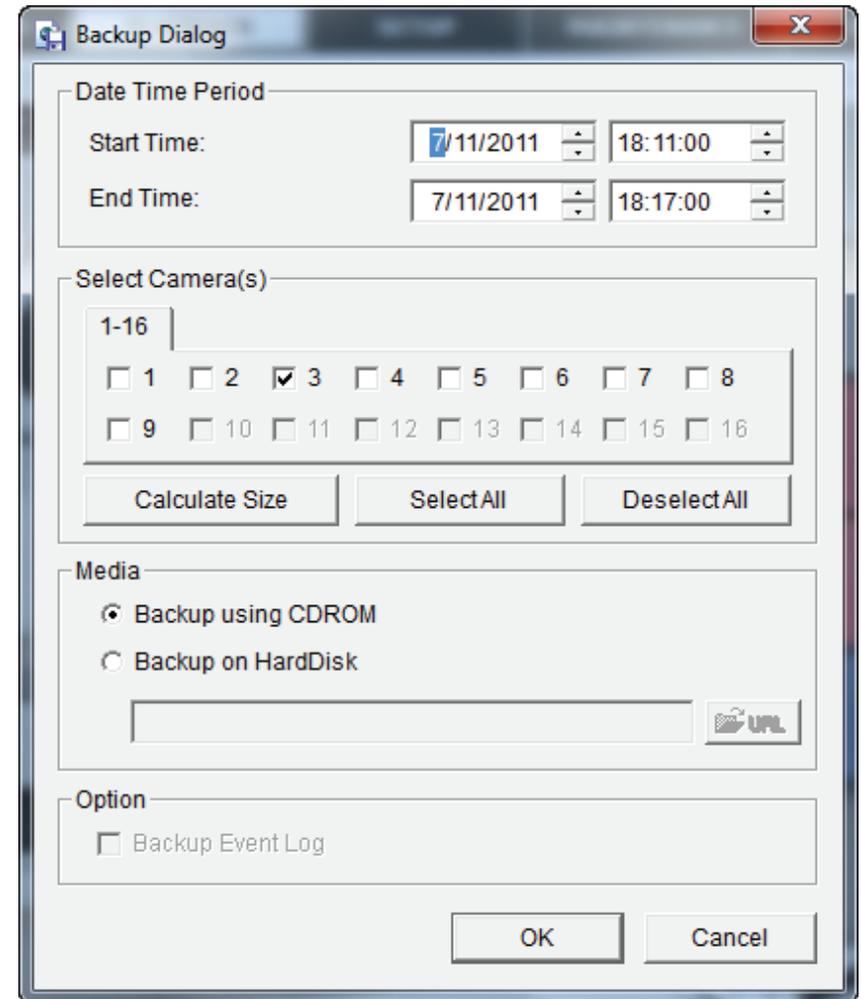
Step 3: Set the **Start Time** and **End Time** that you would like to back up data.

Step 4: Select the cameras that you would like to back up.

Step 5: Select the directory where you would like to back up the data to.

Step 6: Click **Backup**.

The system will then begin the backup process automatically.



Playback Manager Application

Step 1: Please insert the product CD.

Step 2: Install the **Playback** application from CD.

Step 3: Run the **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 the **Playback** section 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 the ESC button on the keyboard to return to normal display.

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

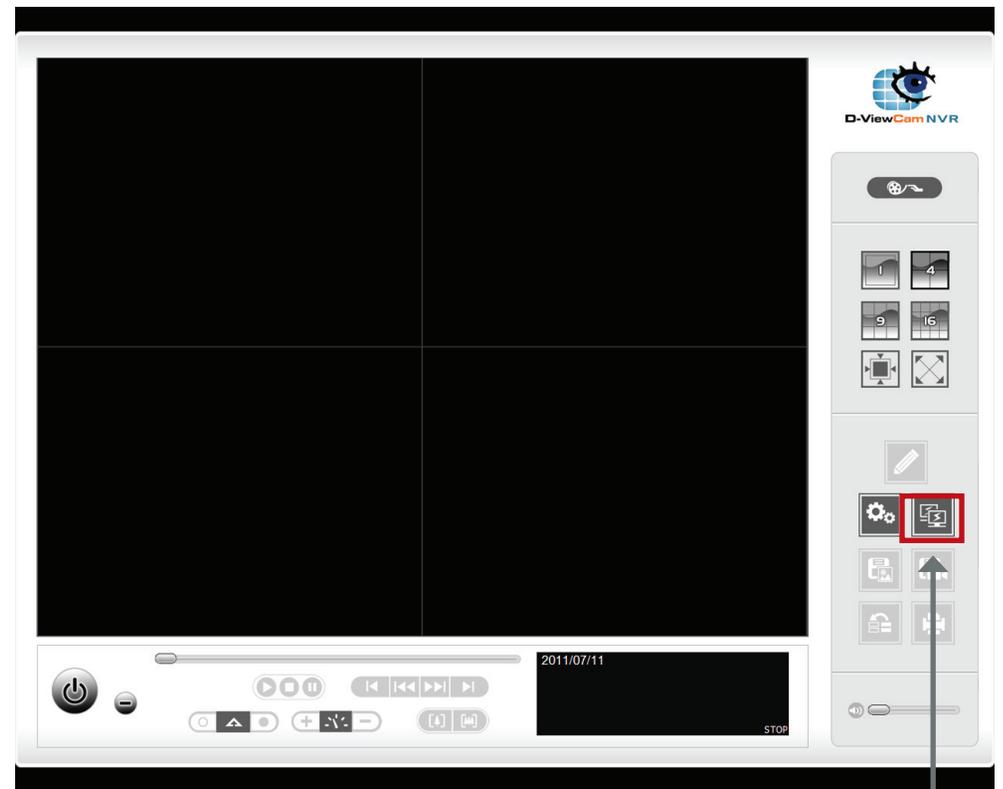
Audio Volume Control: Adjust the sound level.

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.



Remote Server

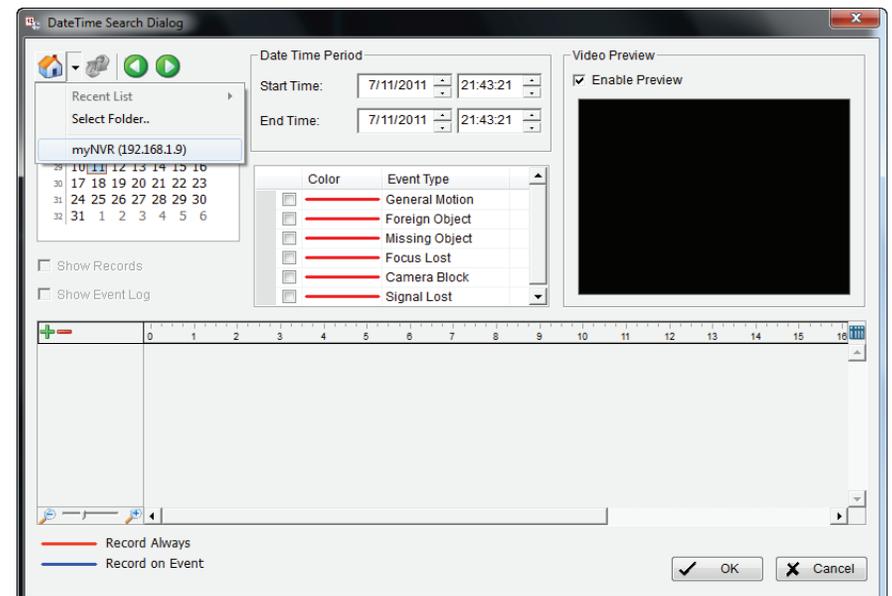
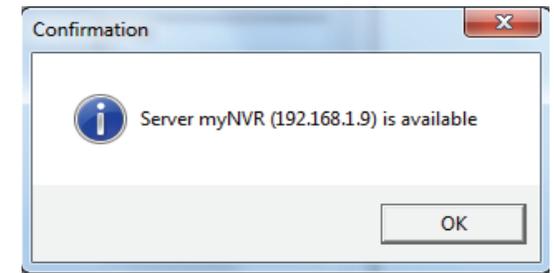
Step forward/ Reverse: Click to pause the playback and move to next frame or last frame.

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

Set Connections to the Units

- Step 1: Click **Remote Server**.
- 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 **Test Server** to test the connection between the local application and the remote unit.
- Step 9: Click **Add** to add this unit into the remote server list.
- Step 10: Click **OK**.

The Search, Playback, Video Enhancement, Print Image, Save Video, Save Image, and Backup functions are the same as the steps in Internet Explorer. Please see the preceding sections: **Search the Recording Video to Playback, Recorded Video Enhancement, Save Video, Save Image, Print Image, and Backup the Recorded Video.**



Backup System

In addition to the ways mentioned in the previous chapters, you can apply the application to back up your files.

Run the Backup application from the Start -> Programs -> D-Link -> Backup System

Step 1: Input the IP address of your unit.

Step 2: Input the user name.

Step 3: Input the password.

Step 4: Click **OK**.

Step 5: Click **New Period**.

Step 6: Select the record date.

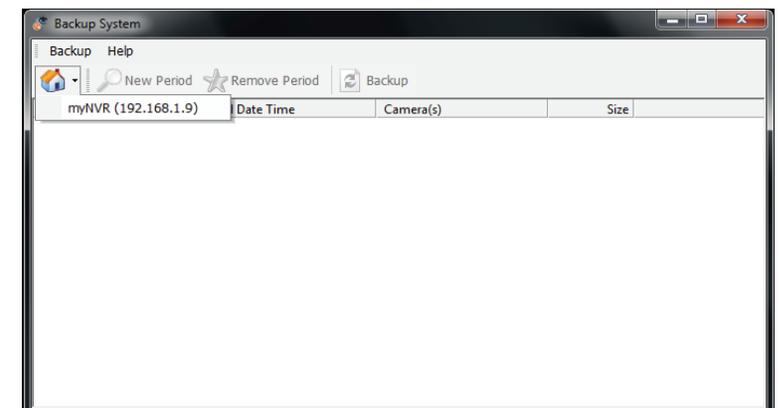
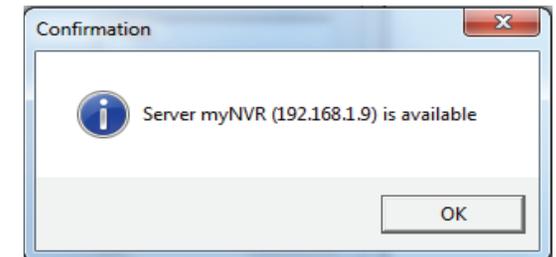
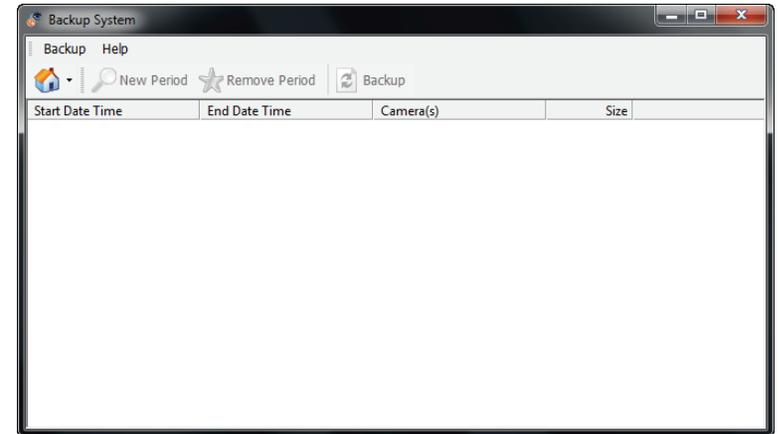
Step 7: Set the **Start Time** and **End Time** you would like to back up (or highlight the video records that you would like to back up).

Note: The time period cannot exceed 24 hours.

Step 8: Select the cameras you would like to back up.

Step 9: Click **OK**.

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

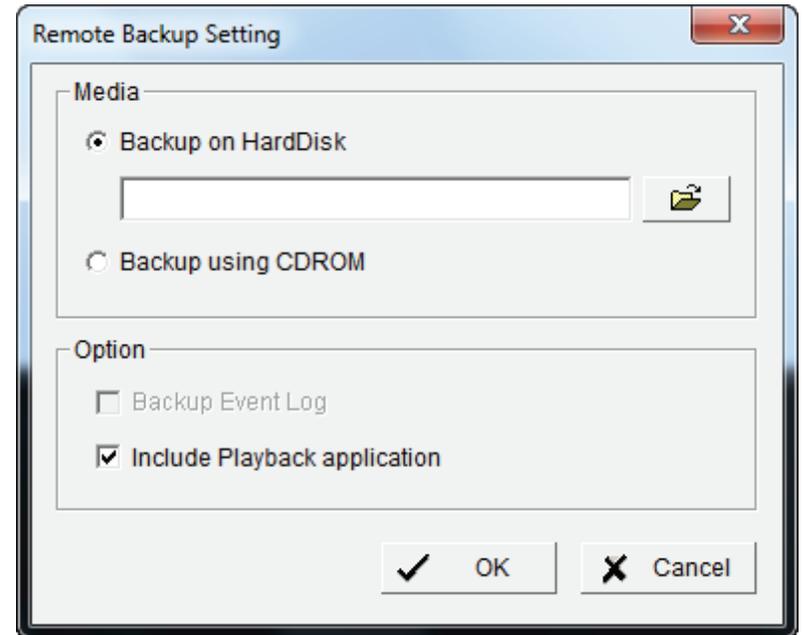
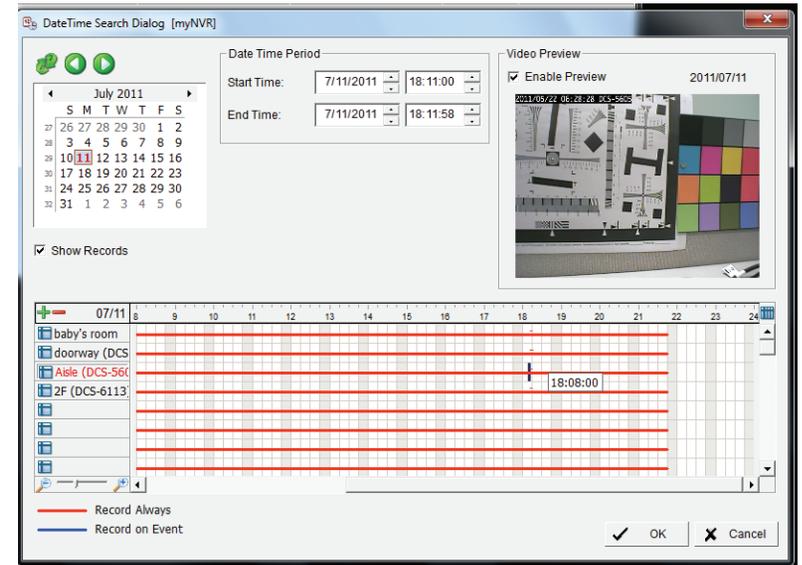


Step 11: Click **Backup**.

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

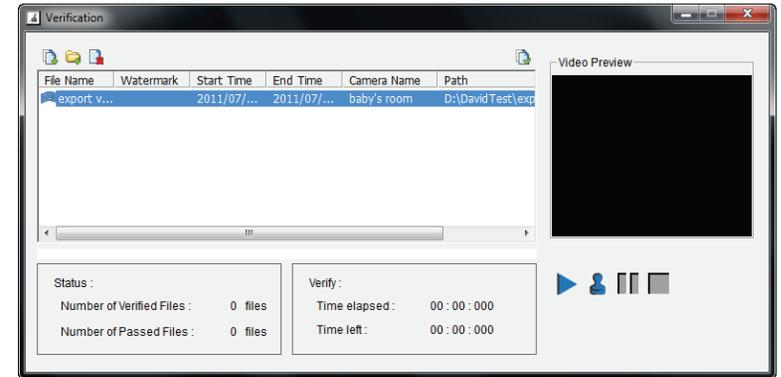
Step 13: Check the **Include Playback application** option, which will add **Playback** application into the backup folder.

Step 14: Click **OK**.



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 that could be verified by Verification Tool:

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

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

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

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

Select All: Select all files in the 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 Verify  to start verification.
3. The verification result will show on the 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, then take the following steps:

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. Back up 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 **Live View/Playback** 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 **Install** to complete the process.

Cannot Log in to the Unit through Internet Explorer

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

Advantages

- Implements a striped disk RAID Volume as 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

Disadvantages

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

RAID 1

Advantages

- 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 back up 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 back up important data before formatting a hard drive.

Technical Specifications

Firmware Specifications

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

Max. capacity (NVR+File Server mode):

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

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 browser (Max. 9 simultaneous channels)
- + Supports mydlink portal via IE or other browsers (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 camera

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 back up raw data to redundant storage
- + Auto back up video from the previous day to the 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 7 or later
- + HTTP Web browser - Internet Explorer 7 or later (32 bit OS only)
- + NVR Search Utility

Hardware Specifications

STANDARDS

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

HARD DISK¹

- + Hard Disk control & manage via PC
- + Reformat Disk
- + RAID 0
- + RAID 1²
- + JBOD

TWO RESET MODES

- + Reset firmware GUI button
- + HW reset button (press over 5 seconds)

FLASH ROM

- + 128 MB

RAM

- + 256 MB DDR II

NIC

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

I/O PORTS

- + RJ45 port
- + DC-in jack
- + USB port for UPS status update (optional)

POWER ADAPTER

- + DC 12 V/3 A

RESET BUTTON

- + Reset to factory default

SECURITY

- + Device lock hole

POWER CONSUMPTION

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

DIMENSIONS (W x D x H)

- + 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

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

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.