

USER MANUAL

DNS-323

VERSION 1.3



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Product Overview

Package Contents

- D-Link DNS-323 2-Bay Network Storage Enclosure
- CD-ROM with Manual and Software
- Quick Installation Guide
- Power Adapter (12V; 3A, 5V; 3A)
- Power Cable Clip
- CAT5 Ethernet Cable



Note: Using a power supply with a different voltage than the one included with the DNS-323 will cause damage and void the warranty for this product.

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

System Requirements

For best results, the following system requirements are recommended:

- Computer with: 1GHz processor / 512 MB RAM / 200 MB available space / CD-ROM drive
- Internet Explorer version 6.0 or Mozilla Firefox 1.0 and above
- 3.5" SATA Hard Drive(s)
- Windows® XP (with Service Pack 2) or Vista®

Introduction

The D-Link DNS-323 2-Bay Network Storage Enclosure shares your documents, photos, music, and videos across the network and on the Internet (via FTP server) so family members, friends, or employees can access them. This enclosure, which can hold two 3.5" SATA hard drives of any capacity¹, creates a central network point for backing up valuable files. The built-in RAID 1² mirroring technology protects these files from drive failure. Other options such as Standard, JBOD, and RAID 0 are also available.

The DNS-323 shares files over the Internet via the built-in FTP server. Users and groups can be created and assigned to folders with either read or read/write permissions. Quotas can be set per user or group to restrict space usage. In addition, the DNS-323 can be used to stream photos, music, and videos to UPnP AV compatible network media players³.

The included CD contains D-Link's Easy Search Utility. This utility allows you to locate the DNS-323 on the network and map drives to your computer. Backup software is also included on the CD. This software allows you to backup your files from a computer to the DNS-323 manually, by a schedule, or in real-time. Real-time backups are a great way to safeguard against unfortunate accidents that may result in the loss of important files.

Combining ease of use with practical and high performance features, the DNS-323 is an organized solution for any network. Free up drive space on computers and centralize data on your network with the DNS-323 2-Bay Network Storage Enclosure!

¹ Hard Drive(s) not included.

² RAID 1 mirroring requires the use of 2 internal SATA drives.

³ D-Link cannot guarantee full compatibility or proper playback with all codecs. Playback capability depends on the codec support of the UPnP™ AV media player.

Features

The DNS-323 is designed for easy installation and allows remote access to important data via your local network or the Internet.

- Two Hard Drive Bays for 3.5" SATA Hard Drives of Any Capacity¹
- Simplified Hard Drive Installation Process – No Tools Required
- Four Hard Drive Configurations: Standard, JBOD (Linear), RAID 0, and RAID 1²
- High Performance Gigabit Ethernet Connectivity (Up to 23/15MBps or 184/120Mbps Read/Write)³
- Built-in FTP Server for File Access from the Internet
- Built-in FTP Server Supports SSL/TLS
- Built-in FTP server supports Unicode
- Scheduled Downloads from Web or FTP Sites
- Full or Incremental Backups
- Real Time Backups With the Included Backup Software
- Users and Groups Can Be Assigned to Folders with Read or Read/Write Permissions
- Quotas For Users and Groups
- Automatic E-Mail Notifications
- Power Management for Conserving Energy and Extending Hard Drive Life
- UPnP AV Server for Streaming Music, Photos, and Video to Compatible Media Players⁴
- iTunes® Software will be able to automatically find and play music directly from the DNS-323
- Built-in USB Print Server for printing from any PC on the Network
- D-Link Easy Search Utility
- Configurable by Web Browser
- Supports Auto Rebuild and Manual Rebuild
- Supports USB UPS, except for the Tripp Lite UPSes
- Supports Jumbo Frames

- Enables you to change from Non-RAID to RAID 1 configuration without losing data on the hard drives.
- Supports Bit Torrent
- Supports XBox 360 and Playstation 3

1 Hard Drive(s) not included.

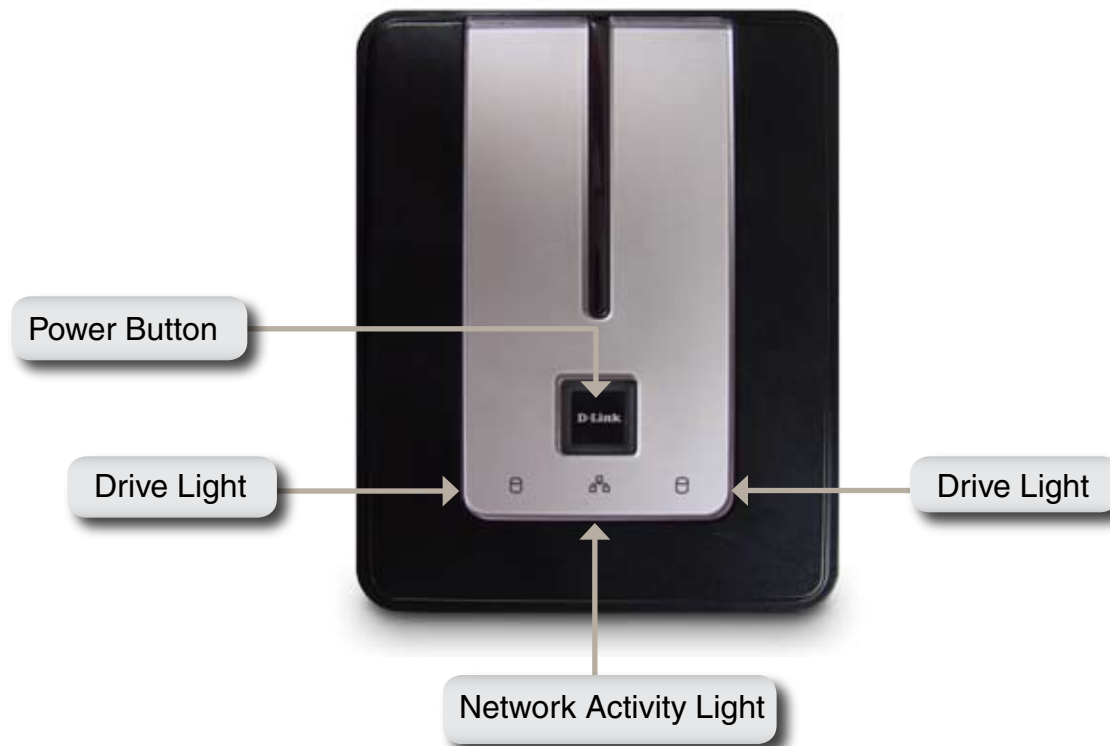
2 RAID 1 mirroring requires the use of 2 internal SATA drives.

3 Speed results will vary depending on the benchmark utility, hard drive configuration, and the network environment used for testing.

4 D-Link cannot guarantee full compatibility or proper playback with all codecs. Playback capability depends on the codec support of the UPnP™ AV media player.

Hardware Overview

Front View



Power Button:

Press once to power on the DNS-323. Press and hold the button until it begins to blink to power down the DNS-323.

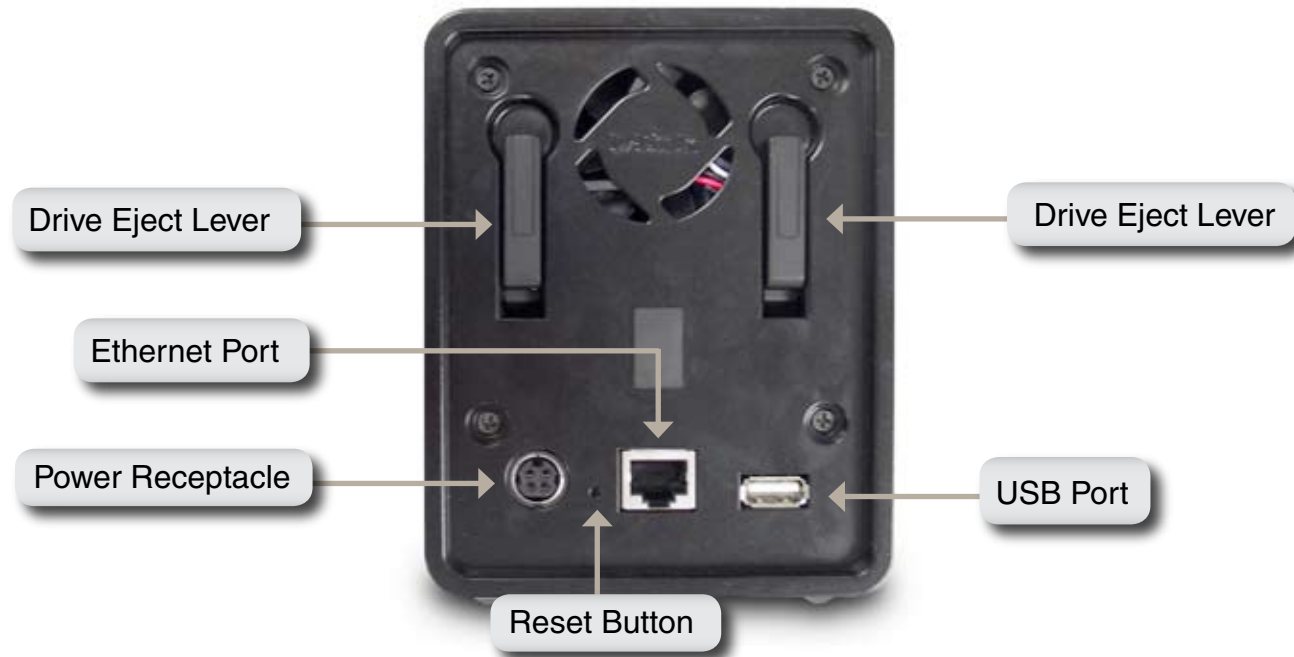
Drive Lights:

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.

Network Activity Light:

The Activity Light will be solid BLUE when there is an Ethernet connection. It will blink to indicate LAN traffic.

Rear Panel (Connections)



Power Receptacle:

The 12V 3A / 5V 3A power supply connects here.

Ethernet Port:

A Gigabit Ethernet port that connects the DNS-323 to a network.

USB Port:

USB Print Server port for connecting a USB printer.

Drive Eject Lever:

Use the levers to eject the hard drives. The front panel must be removed before ejecting the drives.

Reset Button:

A pinhole button located beside the Ethernet socket is used to reset the DNS-323 to the factory default settings.

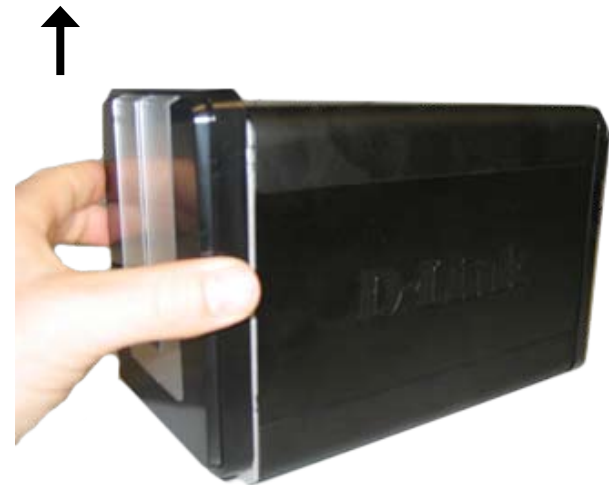
Note: *After resetting the unit's configuration you will still have access to the data on your hard drive(s).*

Installation

Hardware Setup

This section provides unpacking and installation information for the DNS-323. Open the shipping carton for the DNS-323 and carefully unpack its contents. To install the DNS-323 on your local network, refer to the steps below:

1. Access the drive bays by sliding the faceplate up until it unlatches from the device.



2. Once the faceplate is unlatched, pull it off the device, exposing the drive bays.



3. Insert a 3.5" SATA hard drive into each available drive bay. Make sure to align the drive connectors to the SATA connectors on the bottom edge inside the drive bay of the DNS-323. Gently push the drive in until it connects. When a drive is inserted properly, you will feel it "seat" into the connector. Some hard drives that are thin or oddly shaped may need to be guided carefully into position. If a drive is not properly seated, the light will not illuminate after powering on the device.



4. Attach the faceplate to the front of the device.



5. Connect an Ethernet cable to the available Ethernet port. This cable should connect the DNS-323 to your local network via a router or switch, or directly to a computer for configuration.



6. Connect the power adapter to the power receptacle.

7. Connect a USB printer. (Optional)



Configuration

Easy Search Utility

When first powered on, during the initial boot sequence, the DNS-323 will wait to be assigned an IP address via DHCP. If it does not receive an assigned IP address, by default it will have a self-assigned IP address of 192.168.0.32. It is recommended to use the included D-Link Easy Search Utility when accessing and configuring the DNS-323 for the first time. If you want to change the IP address before logging in or are unable to connect to the DNS-323 IP address, you can use the Easy Search Utility provided on the product CD to locate the device on your network and make any needed changes.

Network Storage Device The Easy Search Utility displays all available DNS-323 devices on the network here.

Refresh Refresh the device list.

Configuration Click **Configuration** to access the Web-based utility of the DNS-323.

Language Click **Language** if you wish to store non-English character files. Refer to page 74.

BitTorrent Click **BitTorrent** to use the built-in BitTorrent manager to upload and download Torrents. Refer to page 59.

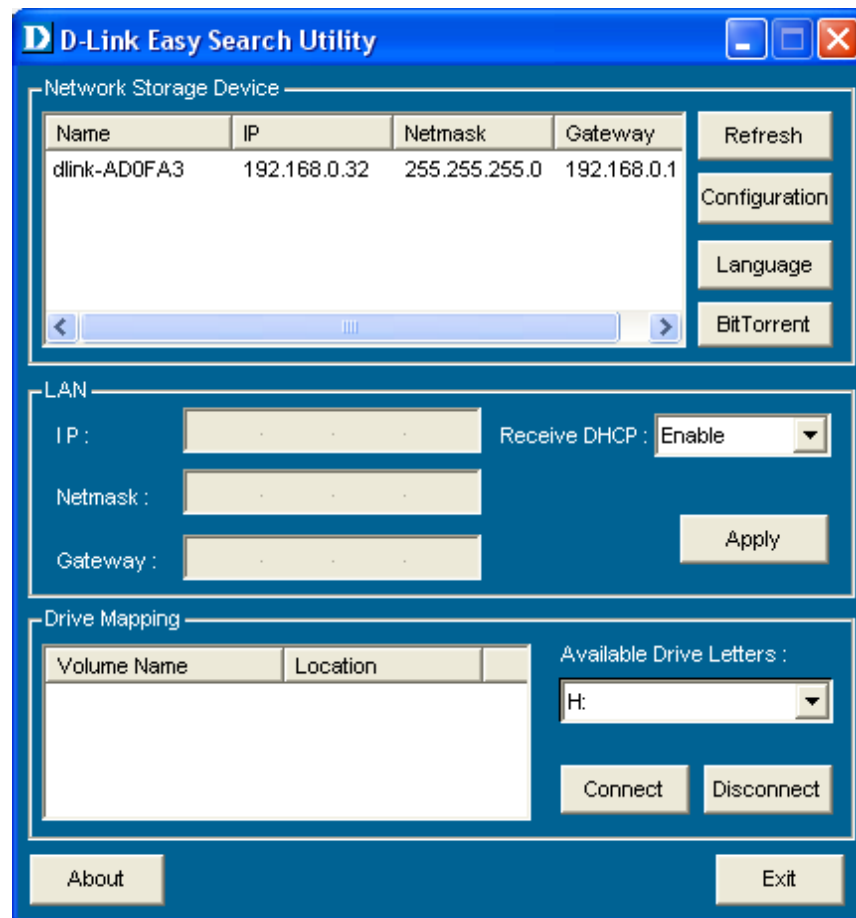
LAN Configure the LAN Settings for the DNS-323 here.

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

Drive Mapping Volumes available for mapping are displayed here.

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

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



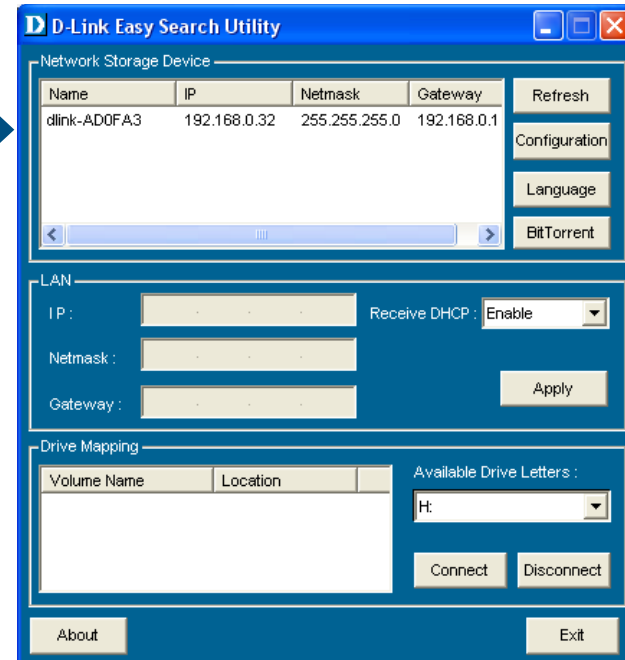
Getting Started

To run the Easy Search Utility, insert the DNS-323 CD into your CD-ROM drive:

Click **Easy Search Utility**.



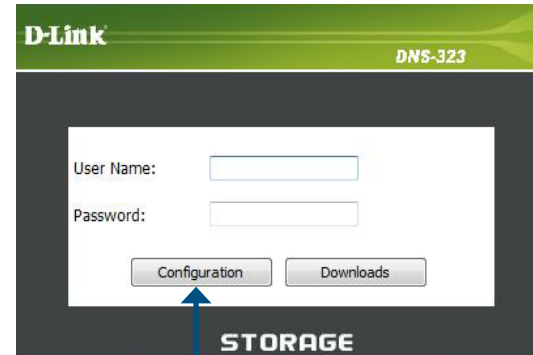
Highlight an available DNS-323 and click **Configuration** to access the web-based utility.



The Login screen will appear:

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

Click **Configuration**

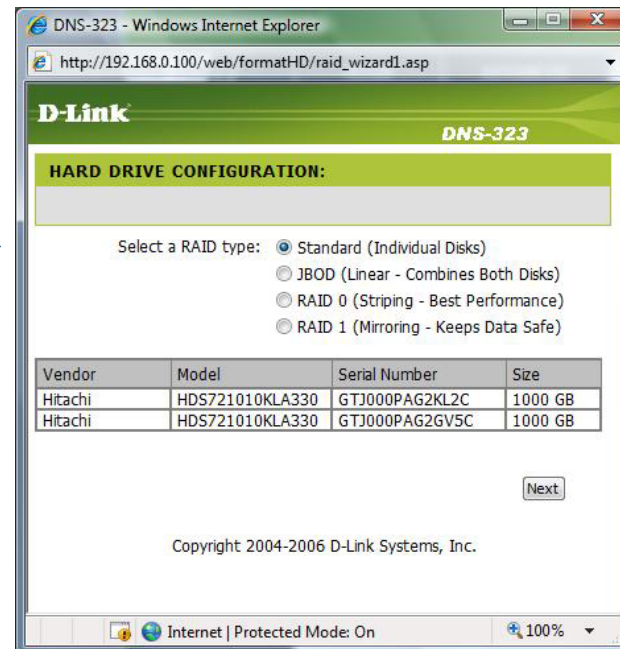


When logging into the DNS-323 for the first time, you will be asked to choose a drive configuration type and format the drives. There are four configuration options: **Standard**, **JBOD**, **RAID 0** and **RAID 1**. Standard configures each disk as a separate volume, while JBOD combines both disks into a single volume, as well as RAID 0 and RAID 1. See page 47 for more details on using the RAID configurations.

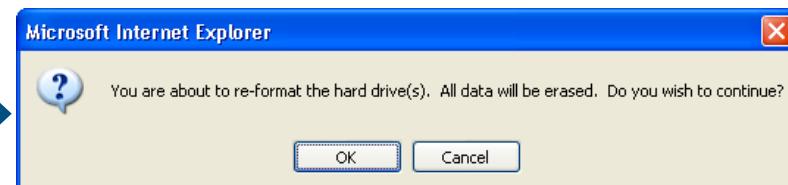
Note: All data will be erased during the format process.

When prompted to configure the Hard Drive Settings:

Select the configuration type of your hard drive, **Standard**, **JBOD**, **RAID 0** or **RAID 1**.

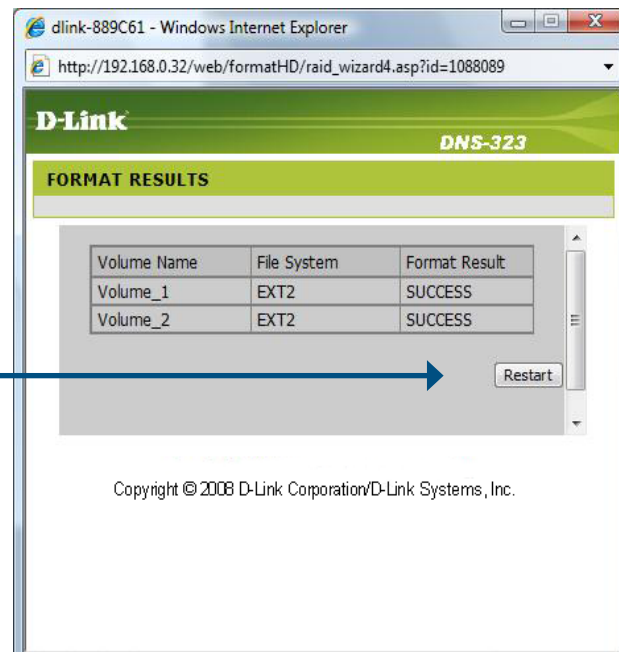


A warning message informing you that your drives will be formatted and all data will be erased. Click **OK** to continue.

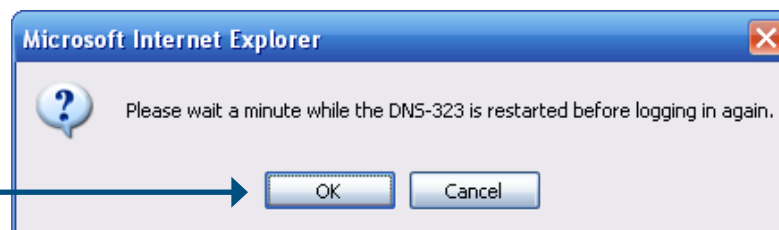


When formatting of the drive completes, the DNS-323 will prompt the user to restart.

Press the **Restart** button to restart the DNS-323

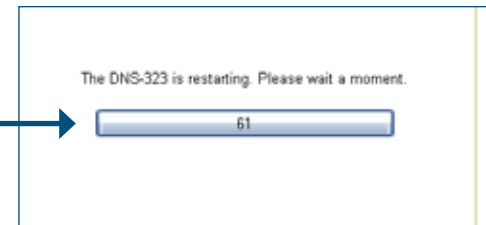


Press the **OK** button to restart the device.



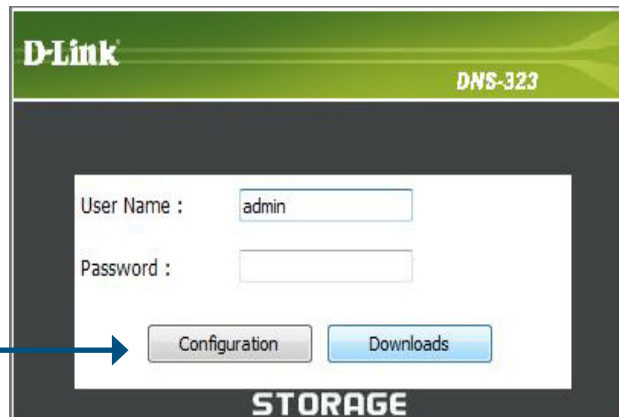
Once the drive completes formatting, the DNS-323 will prompt the user to restart. A restart countdown screen will appear. When restart is complete, a login screen will appear:

Press **OK** to restart the DNS-323.



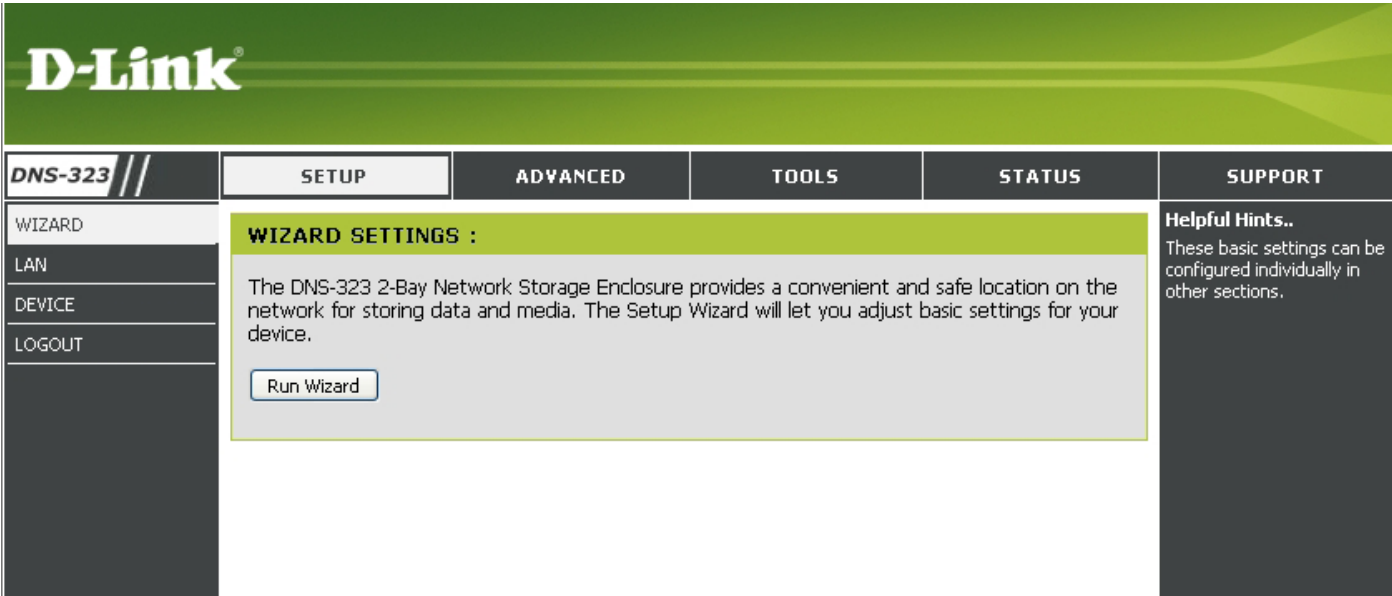
Type **admin** for the username and leave the password field blank.

Click **Configuration**



Note: After logging in to the DNS-323 for the first time it is recommended to add a password to the admin account. (See p. 39 for details.)

After logging in, you will be redirected to the DNS-323 web UI:



Web UI

The DNS-323 web UI defaults to the *Setup* page. The main categories for configuration are located in the menu tabs at the top of the page. These categories include:

- **Setup** - Contains the DNS-323 setup wizard, as well as the LAN configuration settings and device settings.
- **Advanced** - Allows the DNS-323 administrator to configure users, groups of users and their storage quotas. The UPnP AV server, iTunes server, FTP server, LLTD, and DHCP server settings are all contained here as well.
- **Tools** - Contains configuration options for the Admin account, time and system settings, and e-mail alerts. Settings for Power management, RAID configuration, and DDNS are also available from the Tools page.
- **Status** - Contains a summary of DNS-323 information.
- **Support** - Contains the DNS-323 help files.
- **Logout** - Clicking this button will logout the admin and end the DNS-323 configuration session.

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

Setup Wizard

The DNS-323 has a setup Wizard that allows you to quickly configure some of the basic device settings.

When running the DNS-323 setup wizard, the welcome screen details the five steps of the wizard. Click **Next** to continue.

D-Link **DNS-323**

Welcome to the DNS-323 Setup Wizard. The Wizard will guide you through these five quick steps. Begin by clicking on **Next**.

1. Set Password
2. Choose Time Zone
3. Set LAN Connection Type
4. Set Additional Information
5. Restart

Next **Exit**

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It is recommended you set an admin password here. Enter the new password and re-enter it for confirmation. Click **Next** to continue.

D-Link **DNS-323**

SET PASSWORD:

You may change the **admin** account password by entering in a new password. Click **Next** to continue.

New Password

Confirm Password

Back **Next** **Exit**

Set the appropriate **Time Zone** and **Daylight Savings Time**. Click **Next** to continue.



D-Link **DNS-323**

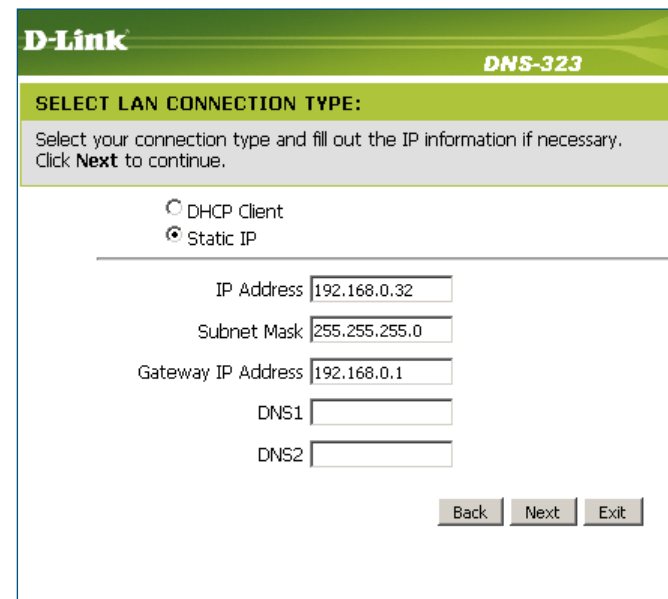
CHOOSE TIME ZONE:
Select the appropriate time zone for your location and click **Next** to continue.

Time Zone
(GMT-08:00) Pacific Time (US & Canada);Tijuana

Daylight Saving Time None

Back Next Exit

Edit or change the DNS-323 LAN information or keep the current settings. Click **Next** to continue.



D-Link **DNS-323**

SELECT LAN CONNECTION TYPE:
Select your connection type and fill out the IP information if necessary. Click **Next** to continue.

☐ DHCP Client
☒ Static IP

IP Address 192.168.0.32
Subnet Mask 255.255.255.0
Gateway IP Address 192.168.0.1
DNS1
DNS2

Back Next Exit

Enter your workgroup, name and description for the DNS-323, or leave the default values and click **Next** to continue.

D-Link **DNS-323**

Set Additional Information:

Enter your Workgroup, Name, and Description for the DNS-323 if necessary. Otherwise you may accept the default values and click **Next** to continue.

Workgroup

Name

Description

When the wizard completes, click **Back** to go back and make changes or click **Restart** to restart the DNS-323 and save the configuration.

D-Link **DNS-323**

SETUP COMPLETED :

The Setup Wizard is complete. Click Back to review and make more changes. Click Completed to save the current settings.

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When the login prompt appears, login using the new administrator password. Click **Configuration**.



D-Link **DNS-323**

User Name:

Password:

STORAGE

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LAN

The Local Area Network settings for the DNS-323 are configured on the LAN page.

Link Speed The LAN Link Speed is set to Auto by default, but can be manually set to 100Mbps or 1000Mbps.

DHCP Client Selecting DHCP Client will cause the DNS-323 to obtain an IP address from the local DHCP server.

Static IP Selecting Static IP requires you to assign the IP information for the DNS-323 manually.

Jumbo Frame Settings Click the **Enable** radio button next to **Status** to enable jumbo frames.

Product Page: DNS-323

Firmware Version: 1.06

DNS-323

WIZARD

LAN

DEVICE

LOGOUT

SETUP

ADVANCED

TOOLS

STATUS

SUPPORT

LAN SETTINGS :

The LAN Settings allows you to configure the Link Speed and to configure the IP address as a DHCP client or Static IP.

Enabling Jumbo Frames allows you to increase the Frame size from 3,000 to 9000 bytes which increase network throughput and performance. Standard Ethernet Frames are 1,500 bytes in size.

Save Settings

Don't Save Settings

LAN SETTINGS :

Speed 1000 Mbps

Link Speed

☒ Auto
 ☐ 100
 ☐ 1000

Apply

☒ DHCP Client
 ☐ Static IP

IP Address :

192.168.1.192

Subnet Mask :

255.255.255.0

Gateway :

192.168.1.1

DNS1 :

192.168.1.1

DNS2 :

JUMBO FRAME SETTINGS :

Status :

☐ Enable
 ☒ Disable

Apply

Helpful Hints..

A Static IP is recommended if you will be using the FTP server.

Device

The device settings page allows you to assign a workgroup, name and description to the DNS-323.

Workgroup Assigns a workgroup name to the DNS-323.

Name Assigns a unique name to the DNS-323. The name can be used to access the device from a web browser instead of using the IP address.

For example: *http://dlink-xxxxxx*

This is useful if there are more than one DNS-323 in the network. By default the device name is dlink-xxxxxx, where xxxxxx is the last six digits of the MAC address.

Description Assigns a device description to the DNS-323.

The screenshot displays the D-Link DNS-323 web interface. At the top, it shows 'Product Page: DNS-323' and 'Firmware Version: 1.06'. The D-Link logo is prominently displayed. Below the logo is a navigation bar with tabs: 'DNS-323', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'DNS-323' tab is selected, and the 'SETUP' sub-tab is active. On the left side of the 'SETUP' page, there is a sidebar with links: 'WIZARD', 'LAN', 'DEVICE', and 'LOGOUT'. The 'DEVICE' link is highlighted. The main content area is titled 'DEVICE SETTINGS :'. It contains a text box with the instruction 'Enter a workgroup, name, and description.' and two buttons: 'Save Settings' and 'Don't Save Settings'. Below this, there is a section titled 'DEVICE SETTINGS :' with three input fields: 'Workgroup' (containing 'workgroup'), 'Name' (containing 'DNS-323'), and 'Description' (containing 'DNS-323'). On the right side of the page, there is a 'Helpful Hints..' section with the text: 'DEVICE: You can access this device by using the name in your web-browser. For example: DNS-323 .'

Advanced Users and Groups

The DNS-323 supports up to 64 unique users. The users can be added to a group, or individually. The users and groups are created to allow access to specific folders on the DNS-323, via FTP or your local network.

User and Group Creation

This section contains required attributes for a new user or group. Including User Name and Password or Group name.

If creating a new user carry out the following steps:

- Click the User radio button.
- Type in a User Name, Password and Confirm Password in the relevant fields.

If creating a new group carry out the following steps:

- Click the Group radio button.
- Type in a Group name in the Add New Group text box.
- Click the Add button to finish creating the group

List of All Users

Displays the list of users that you may assign to the selected group.

Users in Group List

Displays the current status of the quota feature. The quota function can be enable or disabled here.

To add a new user to the selected group, click the user then click the **Add>>** button.

To remove a user from the group, click the user and then click the **<<Remove** button

Product Page: DNS-323 Firmware Version: 1.05

D-Link

DNS-323 // SETUP ADVANCED TOOLS STATUS SUPPORT

USERS / GROUPS

USERS / GROUPS :

This section allows you to create and manage user and group accounts. There are used for user access and read / write privileges for specified folder on the network drive, or to setup FTP access and privileges.

Up to 64 users and 10 groups can be created.

HELPFUL HINTS..
User passwords must be at least five characters long. A user name can not be the same as a group name.

USER AND GROUP CREATION :

☒ User ☐ Group

User Name

Password

Confirm Password

GROUP SETTINGS :

Select Group
(Please select a group)

List of all users

Users in group

☐ All accounts

USER LIST :

NO.	User Name	Group Name	Change Password	Delete

GROUP LIST :

NO.	Group Name	User Name

Quotas

The DNS-323 supports storage quotas for both groups and individual users. Assigning a quota to a group or user will limit the amount of storage they are allocated. By default, users and groups do not have a quota.

User Quota Settings

User quotas are displayed here. Quotas can be edited by clicking on the notepad icon.

Group Quota Settings

Group quotas are displayed here. Quotas can be edited by clicking on the notepad icon.

Quota Status

Displays the current status of the quota feature. The quota function can be started or stopped here.

Product Page: DNS-323

Firmware Version: 1.06

DNS-323	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
---------	-------	----------	-------	--------	---------

USERS / GROUPS

QUOTAS

NETWORK ACCESS

FTP SERVER

UPnP AV SERVER

iTunes SERVER

DHCP SERVER

LLTD

LOGOUT

QUOTA SETTINGS :
 This section allows you to assign a quota to a group or user to limit the amount of storage they are allocated. By default, users and groups do not have a quota.

USER QUOTA SETTINGS :

NO.	User Name	Used	Limit	Edit
-----	-----------	------	-------	------

GROUP QUOTA SETTINGS :

NO.	Group Name	Used	Limit	Edit
-----	------------	------	-------	------

QUOTA STATUS :
 Status: Stopped

Helpful Hints..
 The hard drives must be finished synchronizing before quotas can be set.

Configuring Quotas

By default, all users and groups are displayed in the Quota Settings page. Users and groups are automatically listed on this page, and cannot be deleted. The default quota setting is “Unlimited”.


To add a quota:

Click the notepad icon of the user you want to add a quota to.

QUOTAS SETTINGS :

Assign hard drive space quotas for users or groups.

USER QUOTA SETTINGS :

No.	User Name	Volume_1		Volume_2		Edit
		Used	Limit	Used	Limit	
1	vista	unlimited		unlimited		

Set a quota amount (MB) for the user and click **Apply**.

QUOTAS SETTINGS :


Assign hard drive space quotas for users or groups.

USER QUOTA SETTINGS :

User Name


Volume_1 Quota Amount MB

Volume_2 Quota Amount MB

No.	User Name	Volume_1		Volume_2		Edit
		Used	Limit	Used	Limit	
1	vista	unlimited		unlimited		

The user, their amount of storage used, and their storage limit are displayed.

USER QUOTA SETTINGS :

No.	User Name	Volume_1		Volume_2		Edit
		Used	Limit	Used	Limit	
1	vista	0 MB	20000 MB	0 MB	15000 MB	

GROUP QUOTA SETTINGS :

No.	Group Name	Volume_1		Volume_2		Edit
		Used	Limit	Used	Limit	

QUOTA STATUS :

Status: Stopped

Click **Enabled** to turn quota monitoring on.

QUOTA STATUS :

Status: Started

Once enabled, the status will change to Started.

Network Access

The Network Access settings allow you to assign users and groups to specific folders or volumes. By default, all volumes are open to anyone on the local network with read/write access. Before specific user or group rules can be created, the default rules must be deleted.

Network Access Settings

Assign permissions for users and groups on the local network.

Category

Determines whether the access rule will apply to a group or individual user.

User / Group

Select the user or group for the access rule or you can select **All Accounts**.

Folder

Browse to open and select the folder or directory you are controlling access to.

Permission

Set the user or group permission to **Read Only** or to **R/W: Read/Write**.

Oplock

Opportunistic locks (oplocks) are a characteristic of the LAN Manager networking protocol implemented in the 32-Bit Windows family. Oplocks are guarantees made by a server for a shared logical volume to its clients. These guarantees inform the Client that a file's content will not be allowed to be changed by the server, or if some change is imminent, the client will be notified before the change is allowed to proceed.

The screenshot shows the D-Link DNS-323 web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various settings: USERS / GROUPS, QUOTAS, NETWORK ACCESS (selected), FTP SERVER, UPnP AV SERVER, iTunes SERVER, DHCP SERVER, LLTD, and LOGOUT. The main content area is titled 'NETWORK ACCESS SETTINGS' and contains a description: 'This section allows you to assign access rights for users and groups to a specific folder or volumes. By default, all volumes are open to anyone on the local network with read/write access. Before specific user or group rules can be created, the default rules must be deleted.' Below this are 'Save Settings' and 'Don't Save Settings' buttons. The 'NETWORK ACCESS SETTINGS' section includes a 'Category' dropdown (User selected), a 'User' dropdown (Please Select user...), an 'All accounts' checkbox, a 'Folder' input field with a 'Browse' button, a 'Permission' dropdown (Read Only selected), 'Oplocks' and 'Map archive' checkboxes (both Yes selected), and a 'Comment' text field. At the bottom is the 'NETWORK ACCESS LIST' table.

Share	Path	User/Group	Comment	Oplocks	Map archive	R/W	Actions
BT	Volume_1/BT	ALL		no	no	<input checked="" type="checkbox"/>	
Volume_1	Volume_1	ALL		no	no	<input checked="" type="checkbox"/>	

Helpful Hints..
By default, each hard drive or volume will have an open-access rule. These rules must be deleted before user or group specific rules can be created.

Oplocks are designed to increase network performance when it comes to network file sharing however when using file-based database applications it is recommended to set the share oplocks to **No (off)**.

Map Archive

By default, Windows Vista® has Oplocks enabled and can not be disabled. If you are having network performance issues with applications sharing files from the DNS-323 you may try to improve performance by setting Oplocks to **No (off)**.

Comment

When enabled, the file attribute "Archive" will be copied as the file is being stored on the DNS-323. Certain backup software attach this attribute to files that are being stored as backups.

Network Access List

Enter a comment for reference or description of the rule.

Lists all defined access rules.

FTP Server

The DNS-323 is equipped with a built in FTP Server, which is easy to configure. It allows users access to important data whether they are on the local network or at a remote location. The FTP server can be configured to allow user access to specific directories, and will allow up to 10 users to access the DNS-323 at a time. For improved security, the DNS-323 supports use of an FTPS client, such as SSL/TLS, to encrypt both the password and the data. The DNS-323 supports FireFTP, a cross-platform FTP client for Mozilla Firefox users. See the Using FireFTP section on page 81 for more information.

FTP Account Settings This section contains the user and group configuration settings for access to the FTP folder to the DNS-323.

Category Determines whether the FTP server rule will apply to an individual user or a group.

Folder Browse to open and select the folder or directory you are granting FTP access to. Select **root** to grant access to all volumes.

Permission Set the user or group permission to **Read Only** or **RW: Read/Write**.

FTP Server Settings This section contains the configuration settings for the DNS-323 FTP Server.

FTP Access List The FTP access for users and groups can be added and edited here.

Server Status Displays the current status of the FTP Server.

Product Page: DNS-323 Firmware Version: 1.05

D-Link

DNS-323 // **SETUP** **ADVANCED** **TOOLS** **STATUS** **SUPPORT**

FTP SERVER SETTINGS :

This section contains the configuration settings for the built in FTP server. The server is easy to configure and allows up to 10 users to access the server locally or remotely at the same time.

FTP ACCOUNT SETTINGS :

Category: ☒ User ☐ Group

User: ☐ All accounts

Folder:

Permission:

FTP SERVER SETTINGS :

Max. User:

Idle Time: (1~10 Minutes)

Port: (1025 to 3688, 3690 to 49999, 65501 to 65535, Default: 21)

Flow Control: ☒ Unlimited ☐ x 10 KBs

Client Language:

FTP ACCESS LIST :

Path	User/Group	R/W
		<input checked="" type="checkbox"/> R/W : Read/Write <input type="checkbox"/> Read Only <input type="button" value="Modify settings"/> <input type="button" value="Delete"/>

FTP SERVER STATUS :

Status	Started
Port	21
Max. User	10
Flow Control	Unlimited
Idle Time	2
Client Language	Unicode

Helpful Hints...
If your DNS-323 is connected to a router, you will need to forward port 21 (on the router configuration) to the IP address of the DNS-323. From the outside world, remember to access this FTP server by using the WAN address of your router.

FTP Server Settings

User / Group Select the group or user the FTP server rule will apply to.

Folder Browse to and select the folder or directory you are granting FTP access to. Select root to grant access to all volumes.

Permission Set the user or group permission to Read Only or R/W: Read/Write.

Max User Sets the maximum amount of users that can connect to the FTP server.

Idle Time Sets the amount of time a user can remain idle before being disconnected.

Port Sets the FTP port. Default is 21.

Flow Control Allows you to limit the amount of bandwidth available for each user.

Client Language Most standard FTP clients like Windows FTP, only support Western European codepage when transferring files. Support has been added for non standard FTP clients that are capable of supporting these character sets.

FTP Access List Lists all defined FTP Rules.

FTP SERVER SETTINGS :

Max User
Idle Time (1~10 Minutes)
Port (1~65535,Default:21)
Flow Control ☒ Unlimited ☐ x 10 KBs
Client Language

FTP ACCESS LIST :

☒:R/W : Read/Write
☐:Read Only
☐:Modify settings
☐:Delete

Path	User/Group	R/W
DNS-323_SHARE	anonymous	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

If you are behind a router, you will need to forward the FTP port from the router to the DNS-323. Additional filtering and firewall settings may need to be modified on your router to allow FTP Access to the DNS-323 from the Internet. Once the port has been forwarded on the router, users from the internet will access the FTP server through the WAN IP address of the router.

If you are using a D-Link router, such as the WBR-2310 used in the example below, your port forwarding rule should be similar to the following:

- Name** Name the DNS-323 FTP server rule.
- IP Address** Enter the IP address of the DNS-323.
- Public Port** Enter the public FTP port. By default, the port is 21.
- Private Port** Enter the private FTP port. By default, the port is 21.
- Traffic Type** Set the traffic type to TCP.

The screenshot shows the D-Link WBR-2310 Advanced Setup page. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various configuration options: VIRTUAL SERVER, PORT FORWARDING, APPLICATION RULES, NETWORK FILTER, WEBSITE FILTER, FIREWALL SETTINGS, ADVANCED WIRELESS, and ADVANCED NETWORK. The main content area is titled 'VIRTUAL SERVER RULES' and contains a description of the feature, 'Save Settings' and 'Don't Save Settings' buttons, and a table for configuring rules.

20 - VIRTUAL SERVER RULES					
	Name	IP Address	Port	Traffic Type	Schedule
<input checked="" type="checkbox"/>	DNS-323_FTP	192.168.0.32	Public 21 Private 21	TCP	Always
<input type="checkbox"/>			Public Private	TCP	Always

Helpful Hints..

- Check the **Application Name** drop down menu for a list of pre-defined applications that you can select from. If you select one of the pre-defined applications, click the arrow button next to the drop down menu to fill out the appropriate fields.
- You can select your computer from the list of DHCP clients in the **Computer Name** drop down menu, or enter the IP address manually of the computer you would like to open the specified port to.
- In order to apply a schedule to a Virtual Server Rule, you must first define a schedule on the **Tools>Schedules** page.

If you use an FTP port other than 21, then users accessing the FTP server using an FTP client will have to specify the non-standard port, and users who are using a browser will have to specify the port in the URL (e.g. ftp://ftp.dns323.com:3000, where the FTP port is 3000).

UPnP AV Server

The DNS-323 features a UPnP AV Server. This server provides the ability to stream photos, music and videos to UPnP AV compatible network media players. If the server is enabled, the DNS-323 will be automatically detected by UPnP AV compatible media players on your local network.

UPnP AV Server Select **Enable** or **Disable** to enable or disable the DNS-323 UPnP AV server.

Folder Specifies the folder or directory that will be shared by the UPnP AV server. Select **root** to share all files on all volumes, or click **Browse** to select a specific folder.

Refresh Click the **Refresh** button after adding new files to be used by UPnP AV compatible devices.

The screenshot shows the D-Link DNS-323 web interface. The top navigation bar includes tabs for SETUP, ADVANCED (selected), TOOLS, STATUS, and SUPPORT. On the left, a sidebar lists various settings: USERS / GROUPS, QUOTAS, NETWORK ACCESS, FTP SERVER, UPnP AV SERVER (selected), iTunes SERVER, DHCP SERVER, LLTD, and LOGOUT. The main content area is titled 'UPnP AV SERVER SETTINGS :'. It contains a descriptive paragraph about configuring the UPnP AV server function and a 'Refresh' button. Below this, there is a section for 'UPnP AV SERVER SETTINGS :' with two settings: 'UPnP AV Server' (set to 'Enable') and 'Folder' (set to 'Root'). The 'Folder' dropdown menu is open, showing 'DNS-323_SHARE' as an option. On the right side of the interface, there are 'Helpful Hints..' and instructions about adding new media content and using the 'Refresh' button.

iTunes Server

The DNS-323 features an iTunes Server. This server provides the ability to share music and videos to computers on the local network running iTunes. If the server is enabled, the DNS-323 will be automatically detected by the iTunes program and the music and videos contained in the specified directory will be available to stream over the network.

iTunes Server Select **Enable** or **Disable** to enable or disable the DNS-323 iTunes server.

Folder Specifies the folder or directory that will be shared by the iTunes server. Select **root** to share all files on all volumes, or click **Browse** to select a specific folder.

Password Sets password for the iTunes server. (Optional)

Refresh Click **Refresh** after adding new files to be used with iTunes.

The screenshot shows the D-Link DNS-323 web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various settings: USERS / GROUPS, QUOTAS, NETWORK ACCESS, FTP SERVER, UPnP AV SERVER, iTunes SERVER (selected), DHCP SERVER, LLTD, and LOGOUT. The main content area is titled 'iTunes SERVER SETTINGS :'. It contains two paragraphs of text explaining the settings. Below the text are three buttons: 'Save Settings', 'Don't Save Settings', and 'Refresh'. A second section, also titled 'iTunes SERVER SETTINGS :', contains three settings: 'iTunes Server' with radio buttons for 'Enable' (selected) and 'Disable'; 'Folder' with a checked checkbox for 'Root' and a text input field containing 'DNS-323_SHARE'; and 'Password' with an empty text input field. On the right side of the interface, there is a 'Helpful Hints..' section with two paragraphs of text.

D-Link

DNS-323 // **SETUP** **ADVANCED** **TOOLS** **STATUS** **SUPPORT**

USERS / GROUPS
QUOTAS
NETWORK ACCESS
FTP SERVER
UPnP AV SERVER
iTunes SERVER
DHCP SERVER
LLTD
LOGOUT

iTunes SERVER SETTINGS :

This section allows you to configure the iTunes server function. You can enable or disable server function, set the password for the service, and specify the folder or directory that will be shared.

The DNS-323 will automatically scan for file updates when content is added or deleted from the available folders. You can also click the "Refresh" button to manually scan for file updates.

Save Settings Don't Save Settings Refresh

iTunes SERVER SETTINGS :

iTunes Server ☒ Enable ☐ Disable

Folder ☒ Root

DNS-323_SHARE

Password

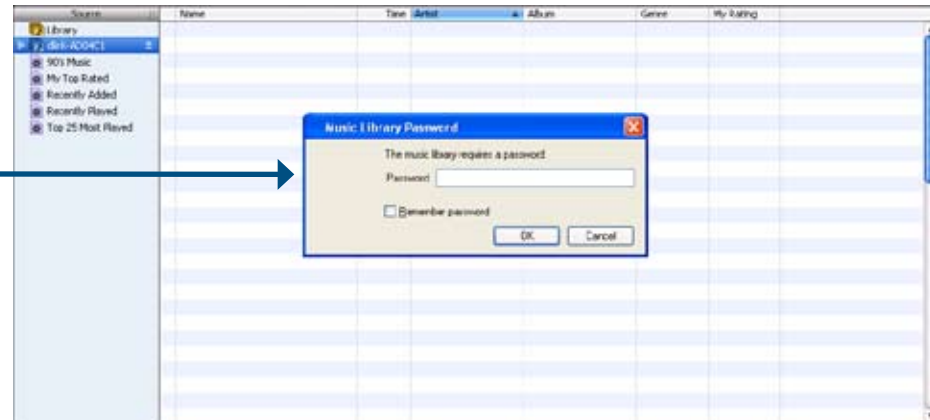
Helpful Hints..

iTunes will automatically detect the DNS-323 on the network. It will be listed on the left side of the program, below Library.

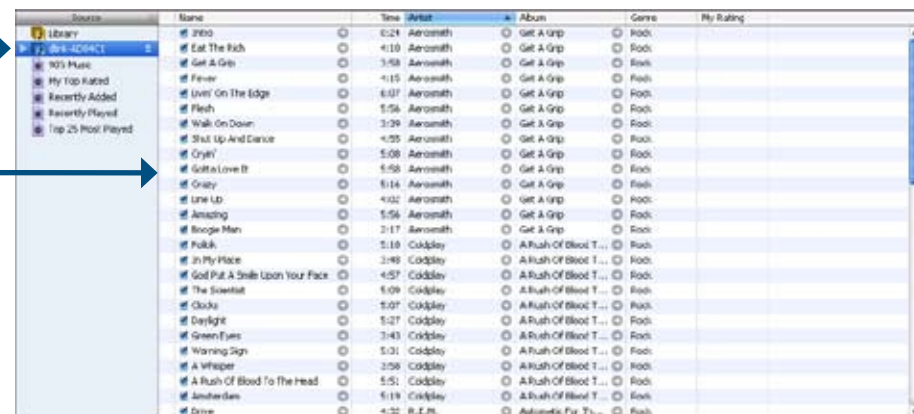
You can manually scan for the file updates by clicking the "Refresh" button.

After enabling the iTunes server on the DNS-323, launch iTunes. When iTunes detects the DNS-323, select it and you will be prompted to enter the iTunes server password if required.

Select the DNS-323. When prompted, enter the iTunes server password. Click **OK**.



Media stored on the DNS-323 will be available for use in iTunes.



DHCP Server

The DNS-323 can be used as a DHCP Server. As a DHCP server, it can be used to serve IP addresses to other devices on your local network. However, this feature should not be enabled if you already have a DHCP server, such as a router on your local network.

DHCP Server Click the **Enabled** or **Disabled** radio button to enable or disable the DNS-323 DHCP server.

Starting IP Address Enter the starting IP address for the range of addresses assigned by the DHCP server.

Ending IP Address Enter the ending IP address for the range of addresses assigned by the DHCP server.

Lease Time Sets the duration of time that an IP address will remain assigned to a device.

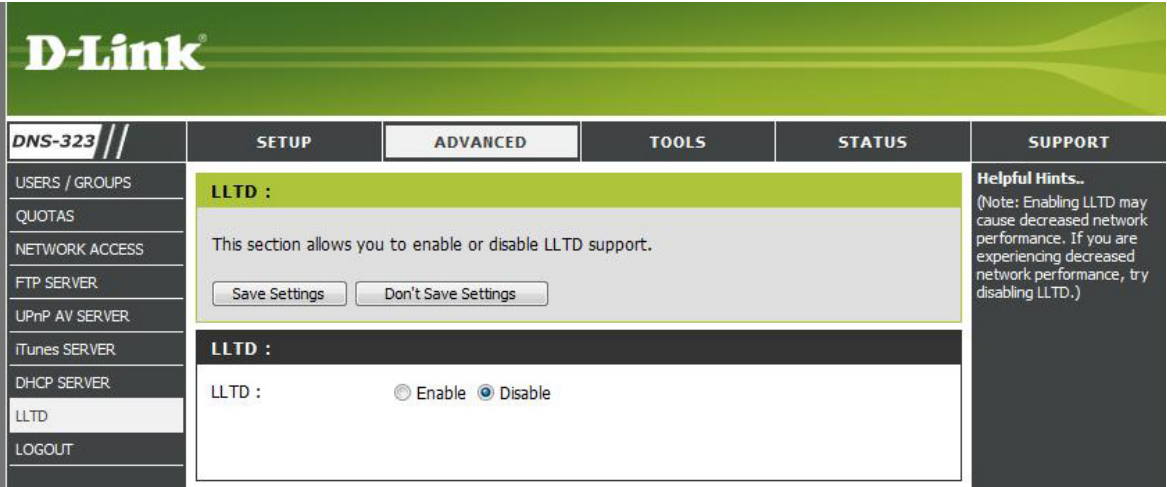
DHCP Client List Displays the Hostname, IP address, MAC address and Expired Time of the clients that have received a DHCP address from the DNS-323.

The screenshot shows the D-Link DNS-323 web interface. The top navigation bar includes 'DNS-323', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various settings: 'USERS / GROUPS', 'QUOTAS', 'NETWORK ACCESS', 'FTP SERVER', 'UPnP AV SERVER', 'iTunes SERVER', 'DHCP SERVER' (which is highlighted), 'LLTD', and 'LOGOUT'. The main content area is titled 'DHCP SERVER SETTINGS :'. It contains a text box stating: 'This section allows you to enable the built-in DHCP server to issue IP addresses to devices on your local network.' Below this are three buttons: 'Save Settings', 'Don't Save Settings', and 'Refresh'. The 'DHCP SERVER :' section shows the 'DHCP Server' status set to 'Disable' (with 'Enable' as an option). The 'Starting IP Address' is '192.168.0.2', the 'Ending IP Address' is '192.168.0.254', and the 'Lease Time' is '1 Week'. At the bottom, there is a 'DHCP CLIENT LIST :' table with columns for 'Host Name', 'IP Address', 'MAC Address', and 'Expired Time'. A 'Helpful Hints..' sidebar on the right explains that if a router is already assigning DHCP, this feature should not be enabled.

LLTD

The DNS-323 supports LLTD. LLTD stands for Link Layer Topology Discovery and is used by the Network Map application that is included in Windows Vista®.

LLTD Click the **Enable** or **Disable** radio button to enable or disable the DNS-323 LLTD service



Tools

Admin Password

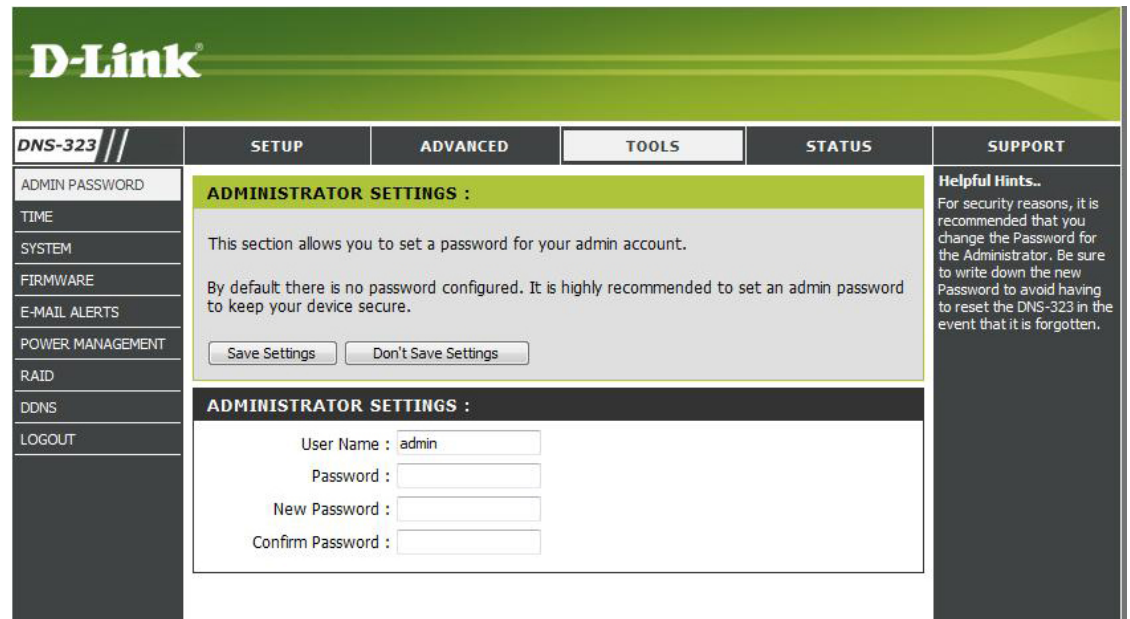
The Admin menu allows you to set a password for your admin account. It is recommended to set a password when first configuring the DNS-323.

User Name The administrator user name is **admin**, and this cannot be changed.

Password Enter the current password. (Leave this blank if you have not set a password yet.)

New Password Enter a new password.

Confirm Password Enter the new password again for confirmation.



The screenshot shows the D-Link DNS-323 web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various configuration options: ADMIN PASSWORD, TIME, SYSTEM, FIRMWARE, E-MAIL ALERTS, POWER MANAGEMENT, RAID, DDNS, and LOGOUT. The main content area is titled 'ADMINISTRATOR SETTINGS :'. It contains a message: 'This section allows you to set a password for your admin account. By default there is no password configured. It is highly recommended to set an admin password to keep your device secure.' Below this message are two buttons: 'Save Settings' and 'Don't Save Settings'. At the bottom of the main content area, there is a section for 'ADMINISTRATOR SETTINGS :' with four input fields: 'User Name : admin', 'Password :', 'New Password :', and 'Confirm Password :'. On the right side of the interface, there is a 'Helpful Hints..' section with text: 'For security reasons, it is recommended that you change the Password for the Administrator. Be sure to write down the new Password to avoid having to reset the DNS-323 in the event that it is forgotten.'

Click **Save Settings** to save the new password.

Time

The DNS-323 Time page contains several different options for setting the device's internal clock. It is important to set an accurate time so that backups and downloads can be accurately scheduled.

Time Zone Select your time zone from the drop-down menu.

Daylight Saving Time Available Daylight Saving Time options are **None**, **USA**, or **EU** (Europe).

NTP Server Select the appropriate option and click **Set Time**.
Network Time Protocol (NTP) synchronizes the DNS-323 with an Internet time server.

D-Link provides two time servers for your convenience. Choose the one closest to your location.

Set The Date Time Manually This option allows you to set the time and date manually.

From My Computer Enter the appropriate time and date and click **Set Time**.

D-Link

DNS-323 // **SETUP** **ADVANCED** **TOOLS** **STATUS** **SUPPORT**

ADMIN PASSWORD
TIME
SYSTEM
FIRMWARE
E-MAIL ALERTS
POWER MANAGEMENT
RAID
DDNS
LOGOUT

SYSTEM TIME SETTINGS :

The Time configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the NTP (Network Time Protocol) Server to periodically update your system time from the NTP Server. You can also copy your computer's time as the system time.

Current Time : 09:38:19 11/07/08

Current Time Zone : (GMT-08:00) Pacific Time (US & Canada);Tijuana

TIME CONFIGURATION :

Time Zone : (GMT-08:00) Pacific Time (US & Canada);Tijuana

Enable Daylight Saving : ☒

Daylight Saving Time : USA

NTP Server :

Enable NTP Server : ☒

NTP Server : ntp1.dlink.com << Select NTP Server

SET THE DATE AND TIME MANUALLY :

Date and Time : Month 11 Day 07 Year 2008

Hour 09 Minute 38 Second 17

Helpful Hints..
Using the NTP option will guarantee the time to be accurate provided that the DNS-323 is connected to the Internet and your DNS values (in SETUP > LAN) are valid.

System

The DNS-323 System menu provides options for system restarts, saving and loading configuration settings, and setting idle times.

Restart Click **Restart** to reboot the DNS-323.

Restore Defaults Click **Restore** to reset the DNS-323 to its factory default settings. This will erase all previous configuration changes.

Shutdown Click **Shutdown** to turn off the DNS-323.

Configuration Settings Click **Save** to save the current DNS-323 configuration settings to a file on the local computer. If at a later time you need to reload this configuration after a system reset, browse to the file and click **Load**.

Idle Time Enter the time (in minutes) that the administrator will be allowed to remain idle while accessing the DNS-323 configuration settings or that users will be allowed to remain idle while accessing the download schedule settings.

Click **Apply** to save the settings.

D-Link

DNS-323 // SETUP ADVANCED TOOLS STATUS SUPPORT

ADMIN PASSWORD
TIME
SYSTEM
FIRMWARE
E-MAIL ALERTS
POWER MANAGEMENT
RAID
DDNS
LOGOUT

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 :

Config Inactivity Timer (Minutes)

Download Schedule Inactivity Timer (Minutes)

Helpful Hints..
If you restore to factory defaults, all current settings will be erased.

Firmware

The DNS-323 Firmware menu makes it simple to check for new firmware releases and upload them to the device.

Firmware Upgrade

This section provides a link to check for new firmware on the D-Link support website.

If a new firmware is available, download the file to your local computer.

Current Firmware Info

This section provides information about the current DNS-323 firmware.

When upgrading the firmware, click **Browse** to select the new firmware file on your local computer.

Click **Apply** to begin the firmware upgrade process.

The screenshot displays the D-Link DNS-323 web interface. The top navigation bar includes links for DNS-323, SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar contains a menu with options: ADMIN PASSWORD, TIME, SYSTEM, FIRMWARE (highlighted), E-MAIL ALERTS, POWER MANAGEMENT, RAID, DDNS, and LOGOUT. The main content area is titled 'FIRMWARE UPGRADE :'. It contains a message about a new firmware upgrade being available and a link to the D-Link Support Page. Below this, instructions are provided for upgrading the firmware, including downloading the file and using the 'Browse' button to select it. At the bottom of the upgrade section are 'Apply' and 'Cancel' buttons. A separate section titled 'CURRENT FIRMWARE INFO :' shows the current firmware version as 1.06 and the date as 10/20/2008. It also includes a 'File Path' field and a 'Browse...' button. On the right side of the interface, there is a 'Helpful Hints..' section with additional information about firmware updates.

E-Mail Alerts

With the DNS-323 E-Mail Alerts, you can configure e-mails to be sent alerting you to certain operational conditions and drive status conditions. These alerts can prove helpful with the management and safeguarding of important data.

E-mail Alert Settings This section contains the configuration settings for the your e-mail account and alert preferences.

Once configured, use the **Test E-Mail** button to send a test e-mail and confirm your settings are correct.

Alert Types This section contains the alert options and their configuration settings.

DNS-323

ADMIN PASSWORD

TIME

SYSTEM

FIRMWARE

E-MAIL ALERTS

POWER MANAGEMENT

RAID

DDNS

LOGOUT

SETUP

ADVANCED

TOOLS

STATUS

SUPPORT

E-MAIL ALERTS :

This section allows you to configure e-mail to be alerting you to certain operational conditions and drive status conditions. These alerts can prove helpful with the management and safeguarding of important data.

Save Settings

Don't Save Settings

Clear Saved Settings

E-MAIL ALERT SETTINGS :

Login Method : ☒ Account ☐ Anonymous

User Name :

Password :

SMTP Server :

Sender E-mail :

Receiver E-mail :

Test E-Mail

ALERT TYPES :

☐ Space Status Interval: (Hours) (Minutes)

☐ One Of The Volumes Is Full

☐ One Of The Hard Drives Has Failed

☐ The Administrator Password Has Been Changed

☐ Firmware Has Been Upgraded

☐ System Temperature Has Exceeded 140 °F

Enabling this feature will cause the DNS-323 to shut down after the selected temperature is exceeded and an e-mail is sent.

Helpful Hints..

The SMTP server is your outgoing mail server. If you aren't sure what this is, contact the company that provides e-mail services for you.

D-Link DNS-323 User Manual

45

E-Mail Alert Settings

Login Method Select either **Account** or **Anonymous**. Choosing Anonymous does not require a User Name or Password.

User Name Enter the appropriate user name for your e-mail account.

Password Enter the appropriate password for your e-mail account.

SMTP Server Enter the IP address or domain name of your outgoing mail server. If you are unsure of this value, contact your e-mail provider.

Sender E-Mail Enter the “from” e-mail address (e.g. alerts@dns323.com). This field does not require a valid e-mail address. However, if your e-mail client is filtering spam, make sure you allow this address to be received.

Receiver E-Mail Enter the e-mail address that will receive the alerts. This address must correspond with the SMTP server configured above.

Test E-Mail Click the **Test E-Mail** button to send a test alert and confirm your settings are correct.

E-MAIL ALERT SETTINGS:

Login Method : ☒ Account ☐ Anonymous

User Name :

Password :

SMTP Server :

Sender E-mail :

Receiver E-mail :

E-MAIL ALERT SETTINGS:

Login Method : ☐ Account ☒ Anonymous

SMTP Server :

Sender E-mail :

Receiver E-mail :

E-Mail Alert Types

Space Status	Select an interval in hours and minutes to have a status of space remaining on the drives e-mailed.
A Volume Is Full	An alert will be sent when the hard drive is full.
A Hard Drive Has Failed	An alert will be sent if a critical error occurs on one of the drives.
Administrator Password Change	An alert will be sent if the admin password is changed.
Firmware Upgraded	An alert will be sent if the firmware is upgraded.
System Temperature Exceeded	An alert will be sent if the DNS-323 device temperature exceeds the set threshold. After the alert has been sent, the DNS-323 will power off for safety.

ALERT TYPES :

☐ Space Status Interval: (Hours) (Minutes)

☐ A Volume Is Full

☐ A Hard Drive Has Failed

☐ The Administrator's Password Has Been Changed

☐ Firmware Has Been Upgraded

☐ System Temperature Has Exceeded °F

Enabling this feature will cause the DNS-323 to shut down after the selected temperature is exceeded and an e-mail is sent.

Power Management

The DNS-323 Power Management feature allows you to configure the drives to shut down while power remains constant to the device. The drives will power up again when data is accessed.

HDD Hibernation

Enable or Disable Power Management on the DNS-323 by clicking the appropriate radio button.

Turn off Hard Drives

Set the amount of time before idle drives will shut down.

Click **Apply** to save the settings or **Don't Save Settings** to discard the changes.

The screenshot shows the D-Link DNS-323 web interface. The top navigation bar includes 'DNS-323', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various configuration options: ADMIN PASSWORD, TIME, SYSTEM, FIRMWARE, E-MAIL ALERTS, POWER MANAGEMENT (highlighted), RAID, DDNS, and LOGOUT. The main content area is titled 'POWER MANAGEMENT :'. It contains a description: 'This section allows you to enable or disable the Hard Drive Hibernation.' Below this are two buttons: 'Save Settings' and 'Don't Save Settings'. A section titled 'HARD DRIVE HIBERBATION SETTINGS :' contains two settings: 'HDD Hibernation :' with radio buttons for 'Enable' (selected) and 'Disable', and 'Turn Off Hard Drives :' with a dropdown menu set to 'After 5 minutes'. A 'Helpful Hints..' sidebar on the right suggests saving electricity costs by using power management.

RAID

The DNS-323 supports four different disk configuration types: **Standard**, where each drive is a unique volume, **JBOD**, which combines both drives in a linear fashion to create one volume, as well as **RAID 0** and **RAID 1**.

When **RAID 1** is used, the DNS-323 supports both Auto Rebuild and Manual Rebuild. Manual Rebuild is now the default (in earlier versions of the DNS-323, Auto Rebuild was the default). Auto Rebuild allows a degraded RAID 1 array to be automatically rebuilt when a failed hard drive is replaced by restoring data from the existing hard drive to the newly inserted hard drive. Please note that rebuilding will erase all data on the newly inserted drive.

Click **Set RAID Type and Re-Format** to change the current drive configuration.

The DNS-323 allows you to change the drive configuration from Standard to RAID 1, without losing any data

Product Page: DNS-323 Firmware Version: 1.06

D-Link

DNS-323 // **SETUP** **ADVANCED** **TOOLS** **STATUS** **SUPPORT**

ADMIN PASSWORD
TIME
SYSTEM
FIRMWARE
E-MAIL ALERTS
POWER MANAGEMENT
RAID
DONG
LOGOUT

HARD DRIVE CONFIGURATION :

RAID CONFIGURATION allows you to change your hard drive configuration, or format a newly inserted hard drive. Please note that formatting a hard drive will erase any data that was stored on the hard drive.

AUTO-REBUILD CONFIGURATION allows you to enable or disable the Auto-Rebuild feature. You can also manually rebuild by clicking the Manually Rebuild Now button. Please note that rebuilding will erase all data on the newly inserted drive.

RAID CONFIGURATION :

Current RAID Type :
Volume_1 : Standard

Set RAID Type and Re-Format

AUTO-REBUILD CONFIGURATION :

☐ Enable Auto-Rebuild
☒ Disable Auto-Rebuild

Manually Rebuild Now

Apply **Cancel**

Helpful Hints...
A RAID 1 array will degrade when one of the hard drives fails. Auto-Rebuild allows a degraded RAID 1 array to be automatically rebuilt when the failed hard drive is replaced by automatically restoring data from the existing hard drive to the newly inserted hard drive.

A pop-up window will appear with the drive configuration options.

Choose the RAID option you want to implement, by clicking the appropriate radio button and press **Next** button.

The steps for configuring RAID are identical to the steps carried out earlier from the **Getting Started** section of the manual.

The screenshot shows a web-based configuration interface for a D-Link DNS-323 device. The title bar is green with the D-Link logo and the model number DNS-323. Below the title bar is a green header with the text "HARD DRIVE CONFIGURATION:". The main content area has a light gray background. It contains a section titled "Select a RAID type:" followed by four radio button options: "Standard (Individual Disks)" (which is selected), "JBOD (Linear - Combines Both Disks)", "RAID 0 (Striping - Best Performance)", and "RAID 1 (Mirroring - Keeps Data Safe)". Below the radio buttons is a table with four columns: Vendor, Model, Serial Number, and Size. The table contains two rows of data for Hitachi drives. At the bottom right of the configuration area is a "Next" button. At the very bottom of the window is a copyright notice: "Copyright © 2008 D-Link Corporation/D-Link Systems, Inc."

Vendor	Model	Serial Number	Size
Hitachi	HDS728080PLA380	PFDBW3SWT2VV4H	82 GB
Hitachi	HDS728080PLA380	PFDBW3SWSJPDW	82 GB

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 DNS-323 supports RAID levels 0 and 1.

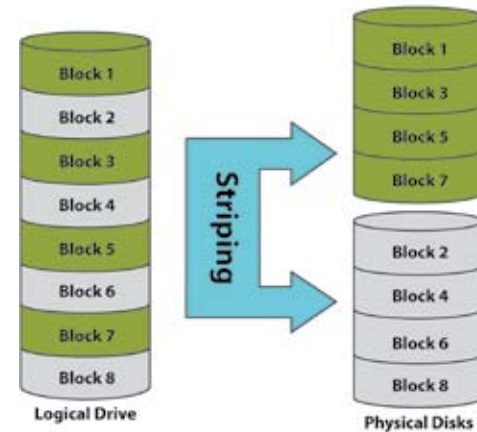
RAID 0 **RAID 0** provides *data striping*, which spreads out blocks of data over both drives, but does not provide data redundancy.

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

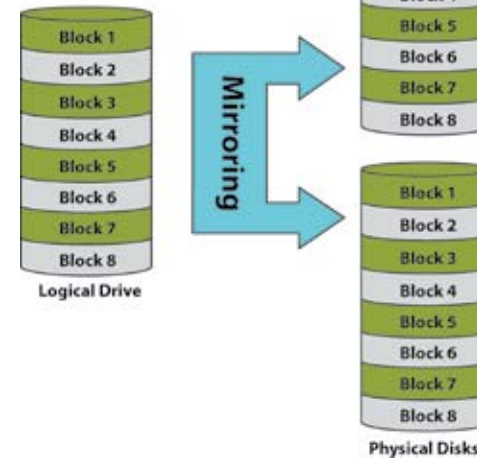
RAID 1 **RAID 1** provides *mirroring* over both disks, with the same read/write speed of a single disk. A **RAID 1** array can only be as large as it's smallest member disk.

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

RAID 0



RAID 1



DDNS

The DDNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (www.whateveryournameis.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 domain name to connect to your server no matter what your IP address is.

DDNS Select **Enable** or **Disable**.

Server Address Select a DDNS Server from the combo box on the right hand-side, or alternatively type in the server address manually.

Host Name Enter your fully qualified Host Name in this field.

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 three fields.

Password or Key Enter your DDNS password or key.

Verify Password or Key Re-type the password or key provided by your service provider. If the Dynamic DNS provider supplies only a key, enter that key in the three fields.

Status Displays your DDNS status.

D-Link

DNS-323 // **SETUP** **ADVANCED** **TOOLS** **STATUS** **SUPPORT**

ADMIN PASSWORD
TIME
SYSTEM
FIRMWARE
E-MAIL ALERTS
POWER MANAGEMENT
RAID
DDNS
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.whateveryournameis.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.](http://www.DLinkDDNS.com)

Save Settings Don't Save Settings

DDNS SETTINGS :

DDNS ☒ Enable ☐ Disable

Server Address << Select Dynamic DNS Server

Host Name [e.g. www.dlinkdns.com]

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.

Status

Device Information

LAN Info Displays the local network settings of the DNS-323.

Device Info Displays the workgroup, name, description and current temperature of the DNS-323.

Printer Info Displays information for a connected USB printer.

If your computer is having problems printing to the DNS-323, you can click the **Clear Print Queue(s)** button to remove any print jobs that may be causing your computer to be unable to print.

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

Product Page: DNS-323 Firmware Version: 1.06

D-Link

DNS-323 // SETUP ADVANCED TOOLS STATUS SUPPORT

DEVICE INFO LOGOUT

DEVICE INFORMATION :

View a summary of device information here.

LAN INFO :

IP Address: 192.168.1.192
Subnet Mask: 255.255.255.0
Gateway IP Address: 192.168.1.1
Mac Address: 00:19:5B:3D:04:D1
DNS1: 192.168.1.1
DNS2:

DEVICE INFO :

Workgroup: workgroup
Name: DNS-323
Description: DNS-323
System Temperature: 116°F / 47°C

PRINTER INFO :

Manufacturer: None
Product: None

HARD DRIVE INFO :

Total Drive(s): 1

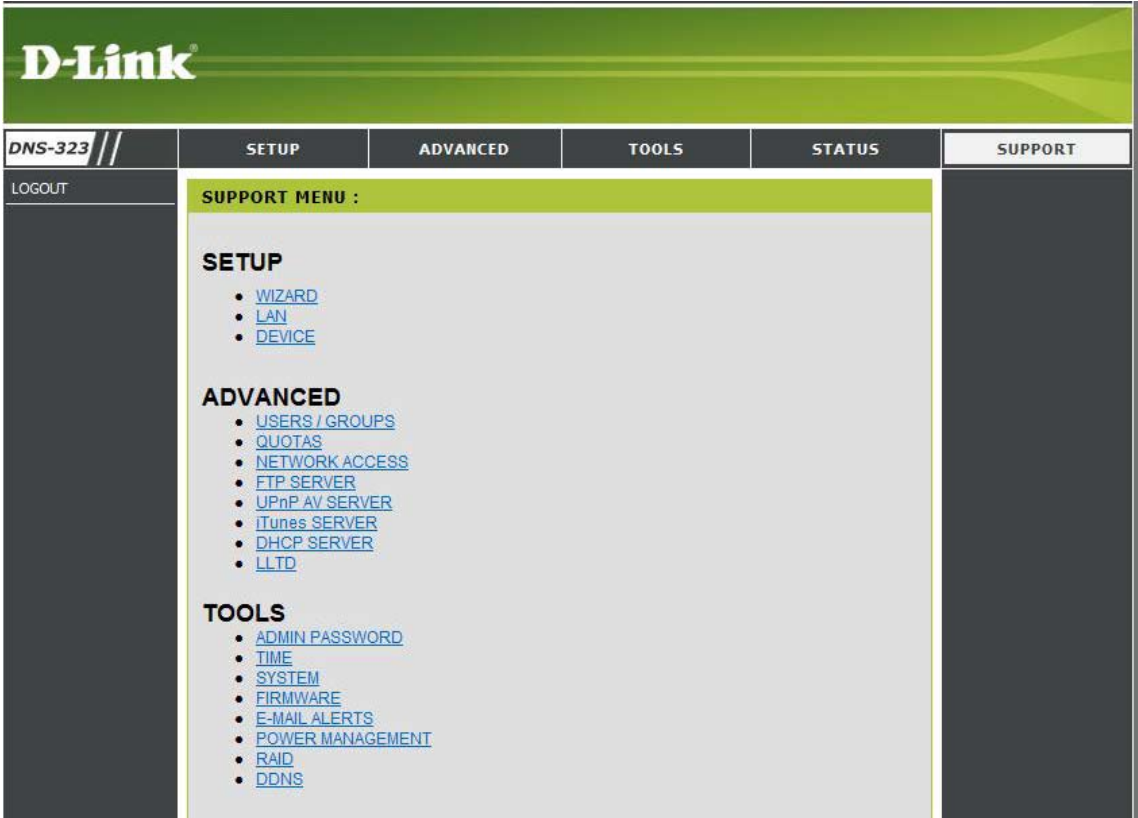
Volume Name: Volume_1
Total Hard Drive Capacity: 983454 MB
Used Space: 10092 MB
Unused Space: 973361 MB

PHYSICAL DISK INFO :

Slot	Vendor	Model	Serial Number	Size
1	Seagate	ST31000340AS	9QJ04LQB	1000 G
2	-	-	-	-

Support

The DNS-323 Support page provides a menu of Support topics explaining the features of the device.



Mapping a Drive

You can use the D-Link Easy Search Utility to map drives to your computer. Insert the DNS-323 CD into your CD-ROM drive.

Click **Easy Search Utility**.



The Easy Search Utility will load and detect any DNS-323 devices that are on the local network.

If the DNS-323 you are working with does not show up in the device list, click **Refresh**.

The screenshot shows the 'D-Link Easy Search Utility' window. It has three main sections: 'Network Storage Device', 'LAN', and 'Drive Mapping'. The 'Network Storage Device' section contains a table with columns 'Name', 'IP', 'Netmask', and 'Gateway'. The first row shows 'dlink-AD0FA3', '192.168.0.32', '255.255.255.0', and '192.168.0.1'. To the right of the table are buttons for 'Refresh', 'Configuration', 'Language', and 'BitTorrent'. The 'LAN' section has input fields for 'IP:', 'Netmask:', and 'Gateway:', along with a 'Receive DHCP:' dropdown menu set to 'Enable' and an 'Apply' button. The 'Drive Mapping' section has a table with columns 'Volume Name' and 'Location', an 'Available Drive Letters:' dropdown menu set to 'H:', and 'Connect' and 'Disconnect' buttons. At the bottom are 'About' and 'Exit' buttons.

Highlight an available DNS-323.

All available volumes will be displayed under **Drive Mapping**. Highlight the volume you want to map to your computer.

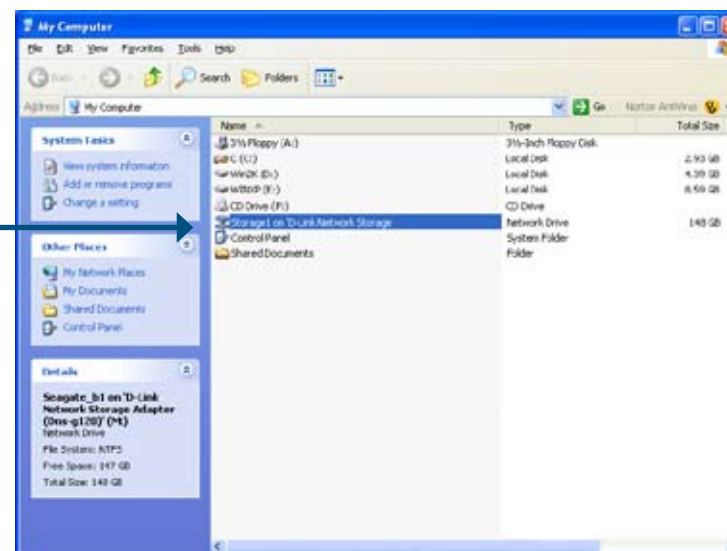
Select an available drive letter from the drop-down menu and click **Connect**.

Once connected, your mapped drive(s) will appear in **My Computer**.

Double-click the **My Computer** icon on your desktop.



Double-click on the mapped drive to access the files and folders.



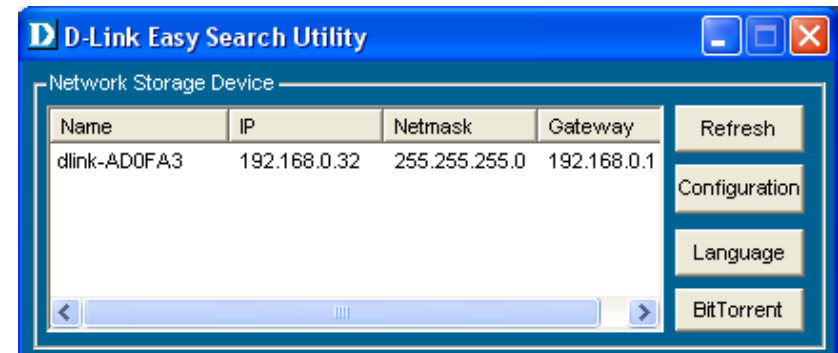
Download Scheduling

The DNS-323 Download Scheduling feature allows you to schedule folder or file downloads and backup sessions.

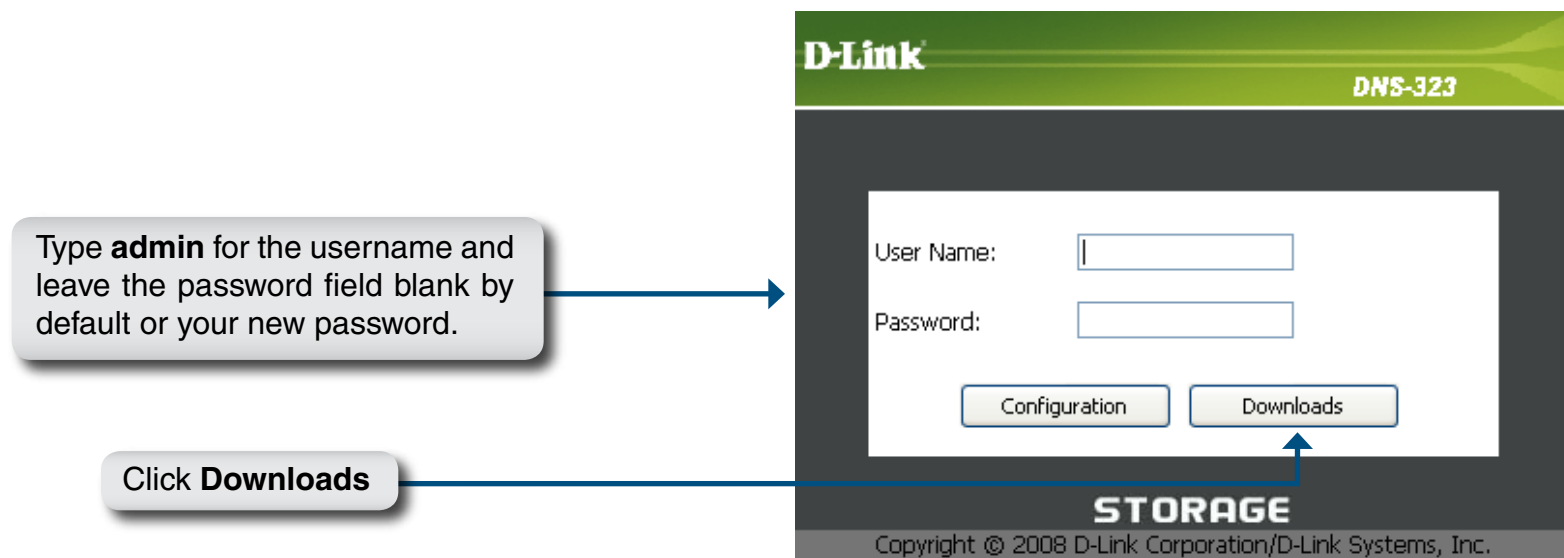
Begin by accessing the web-based configuration utility of your DNS-323:

Click **Easy Search Utility**.

Highlight an available DNS-323 and click **Configuration** to access the web-based utility.



The DNS-323 login screen will appear:



The DNS-323's **Download Scheduling** configuration page will appear.

Schedule Downloads

Scheduling Settings

Configure download and backup schedules here.

Schedule List

The Schedule List will display all completed, active, and pending scheduled downloads and backups.

Product Page: DNS-323 Firmware Version: 1.06

D-Link

DNS-323 // Schedule Downloads BitTorrent SUPPORT

Scheduling Settings :

Schedule downloads of files and folders from an FTP server, web server, or local network share.

Save Settings Don't Save Settings

Scheduling Settings :

Login Method ☐ Account ☒ Anonymous

User Name

Password

Type

URL Test Local

Save To Browse

When Date : 11 / 07 / 2008 Time : 09 : 43

Recurring Backup NONE 00 : 00

☐ Incremental Backup (Only for local backup)

Schedule list :

Status	Download Path	Save To	Time	Del
Refresh				

Helpful Hints..
Always test the URL before applying changes. This will help to ensure a successful download.

Scheduling Settings

Login Method

Select the appropriate login method to access the files for download. If the site requires login credentials, select **Account** and enter a valid username and password.

Type

Select **File** or **Folder**, depending on what you want to download or backup.

URL

Enter the URL of the site or server you are initiating a transfer from.

E.g. ftp://123.456.789/Test
ftp://123.456.789/test.txt
http://www.test.com/test.txt

Test

Click **Test** to test the URL is valid and the user name and password are correct.

Local

Click **Local** to set the source file or folder from one of the internal drive volumes. Click **Browse** to select the file or folder, and click **Ok** to accept the network path.

Save To

Enter a valid destination drive on the DNS-323, or click **Browse** to select the destination.

When

Enter the date and time you want the scheduled backup or download to occur.

Recurring Backup

Designate the interval and time you want the backup or download to run unattended.

Incremental Backup

By default all local backups and file/folder downloads are in **Overwrite** mode, meaning that identical files in the destination folder will be overwritten by the source files. Checking **Incremental Backup** will have the DNS-323 compare identical file names at the source and destination. Files will only be overwritten if the source file is more recent edited.

The screenshot shows the 'SCHEDULING SETTINGS' window. It contains the following fields and controls:

- Login Method:** Radio buttons for 'Account' and 'Anonymous' (selected).
- User Name:** Text field with masked characters '*****'.
- Password:** Text field with masked characters '*****'.
- Type:** Dropdown menu showing 'File'.
- URL:** Text field with 'Test' and 'Local' buttons to its right.
- Save To:** Text field with a 'Browse' button to its right.
- When:** Date and time selection fields. Date is set to 03/03/2008, and Time is set to 14:10.
- Recurring Backup:** Dropdown menu showing 'None', and two time selection fields set to 00:00.
- Incremental Backup:** A checkbox labeled 'Incremental Backup (Only for local backup)' which is currently unchecked.

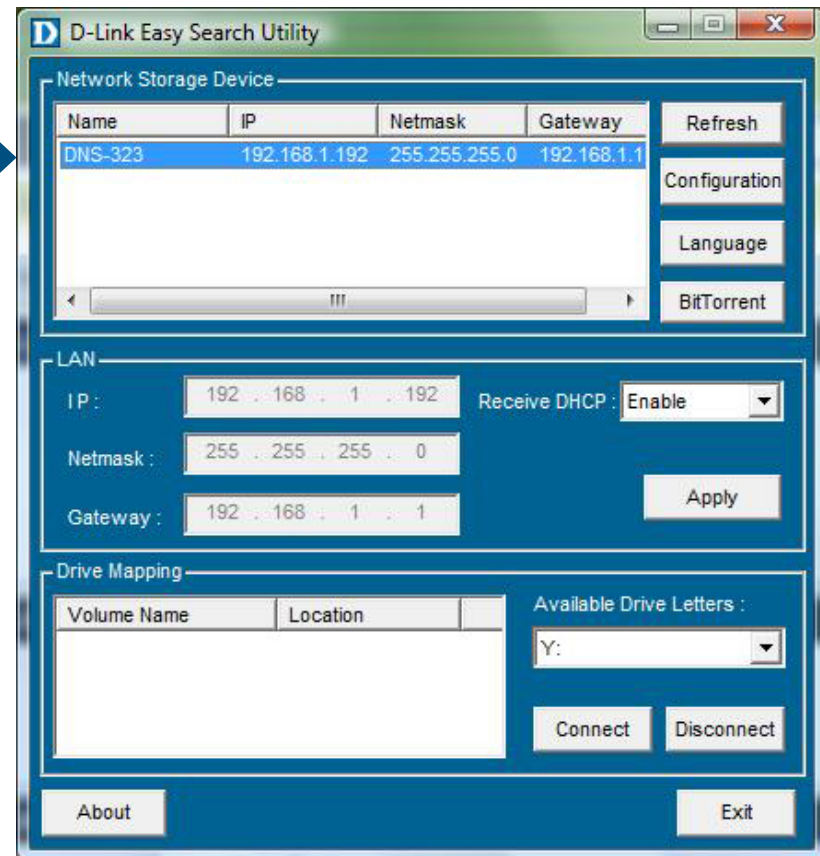
BitTorrent

The DNS-323 features a built-in BitTorrent Manager allowing you to Download and Upload Torrents with the DNS-323.

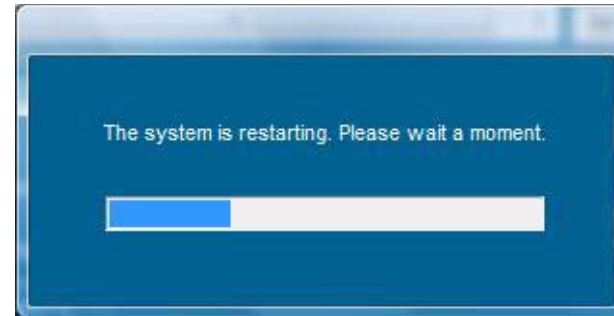
Installing BitTorrent

To install the BitTorrent program, insert the DNS-323 CD into your CD-ROM and launch the Easy Search Utility.

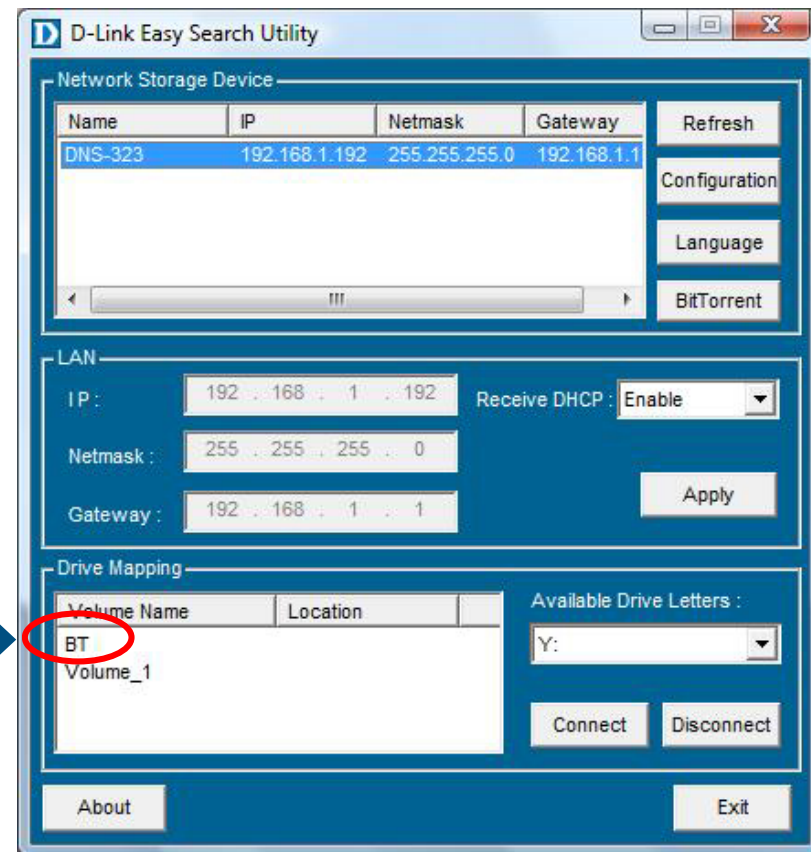
Highlight the DNS-323 and click the **BitTorrent** button



When the BitTorrent installation has completed, the following window will appear to indicate that the DNS-323 is restarting:



After restarting, the Easy Search utility shows the BitTorrent installation as a volume on the DNS-323

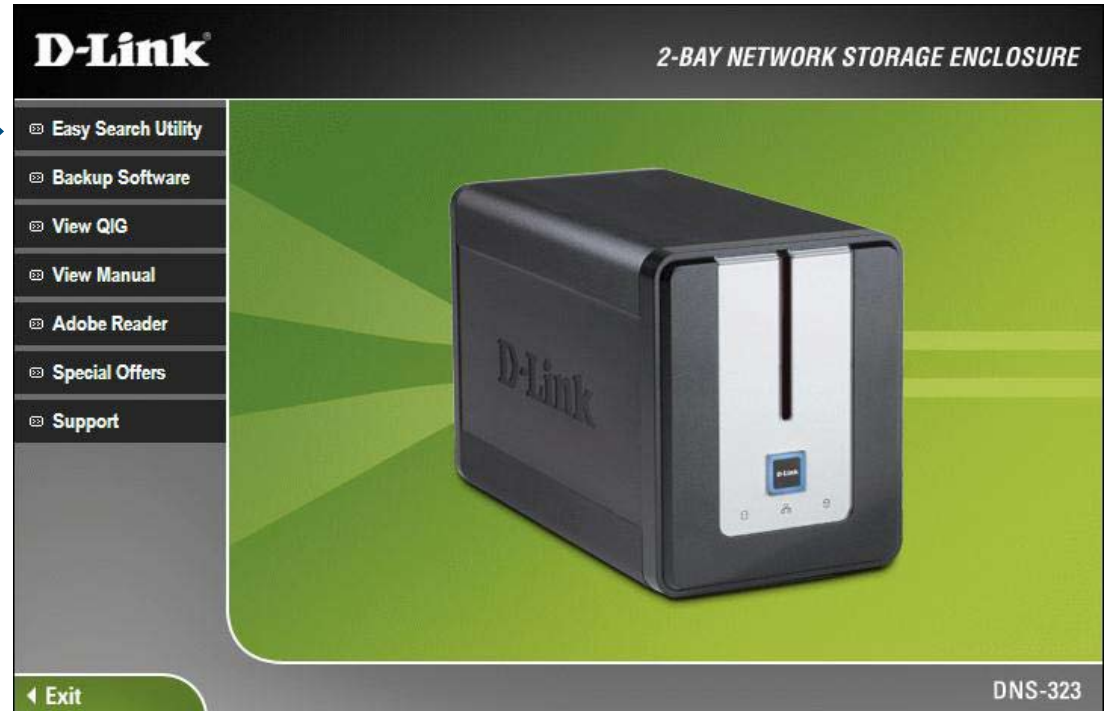


BitTorrent is appearing as a volume.

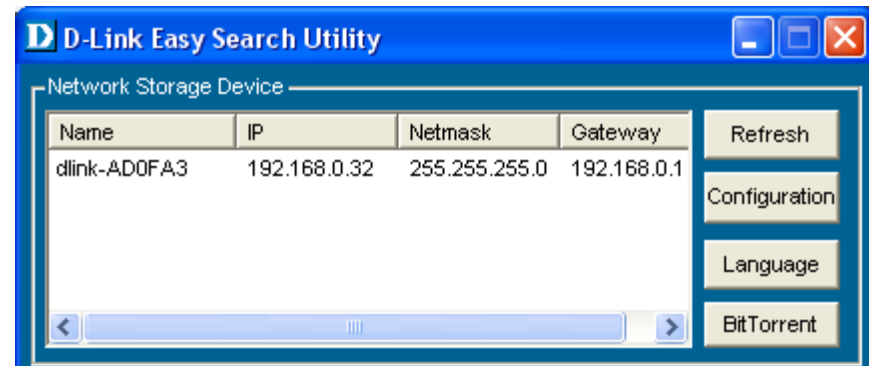
BitTorrent Configuration

After installing the BitTorrent program, you can access the DNS-323 built-in BitTorrent menu by inserting the DNS-323 CD into your CD-ROM and launching the Easy Search Utility. To access the BitTorrent menu access the configuration of the DNS-323.

Click **Easy Search Utility**.

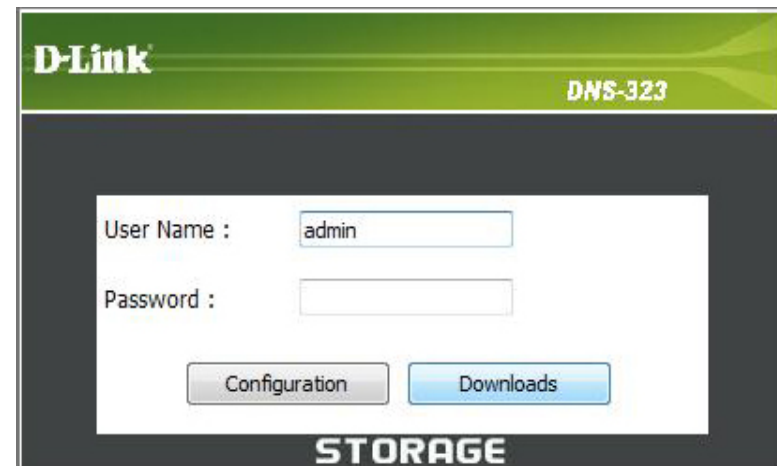


Highlight an available DNS-323 and click **Configuration** to access the web-based utility.



The DNS-323 login screen will appear.

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



On the following screen click on the **BitTorrent** option to access the BitTorrent settings:

You can add Torrents from either a URL or from a file on your PC.

Product Page: DNS-323

Firmware Version: 1.06

D-Link

DNS-323

Schedule Downloads

BitTorrent

SUPPORT

Downloads

Settings

LOGOUT

Settings :

Here you can configure your BitTorrent download manager settings.

Settings :

Port Settings:

☒ Default (6881)

☐ Custom

Incoming connections port:

Bandwidth Management:

☒ Automatic

☐ Manual

Maximum download rate (kB/s):

default: -1 (unlimited)

Maximum upload rate (kB/s):

default: -1 (unlimited)

Max. upload rate when seeding (kB/s)

default: -1 (unlimited)

Seeding:

☒ Seed until removed

☐ Stop seeding when ratio reaches

%

☐ Stop seeding after

(Minutes)

Save

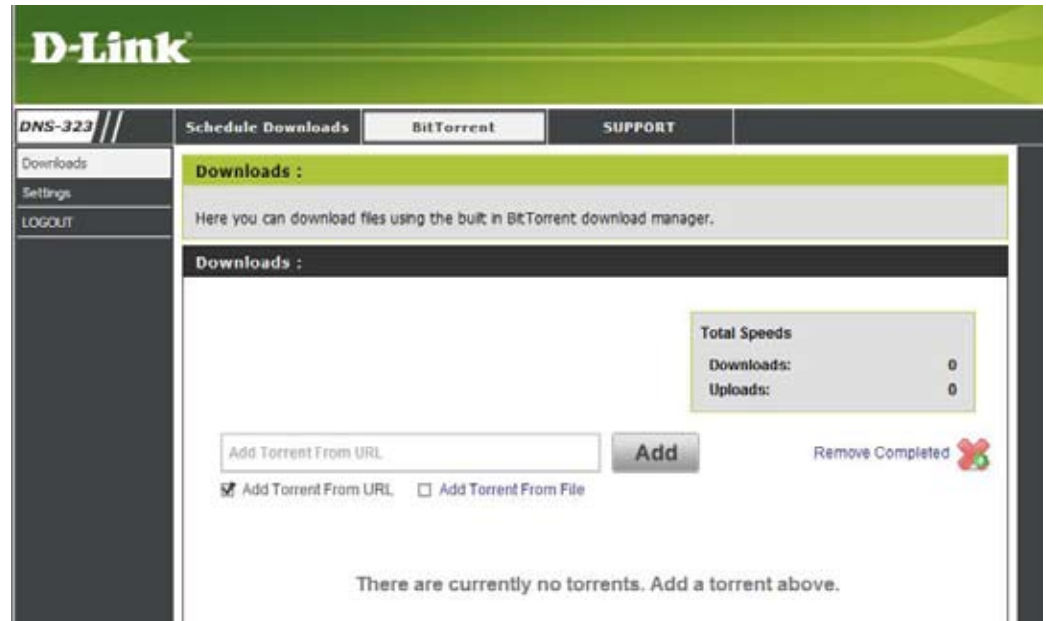
Cancel

Adding a Torrent From URL

To add a Torrent from a URL

- Click the **Add Torrent from URL** checkbox.
- Type in the URL of the website where you will download the Torrent from and click the **Add** button.

The Torrent will now appear in the Downloads list.

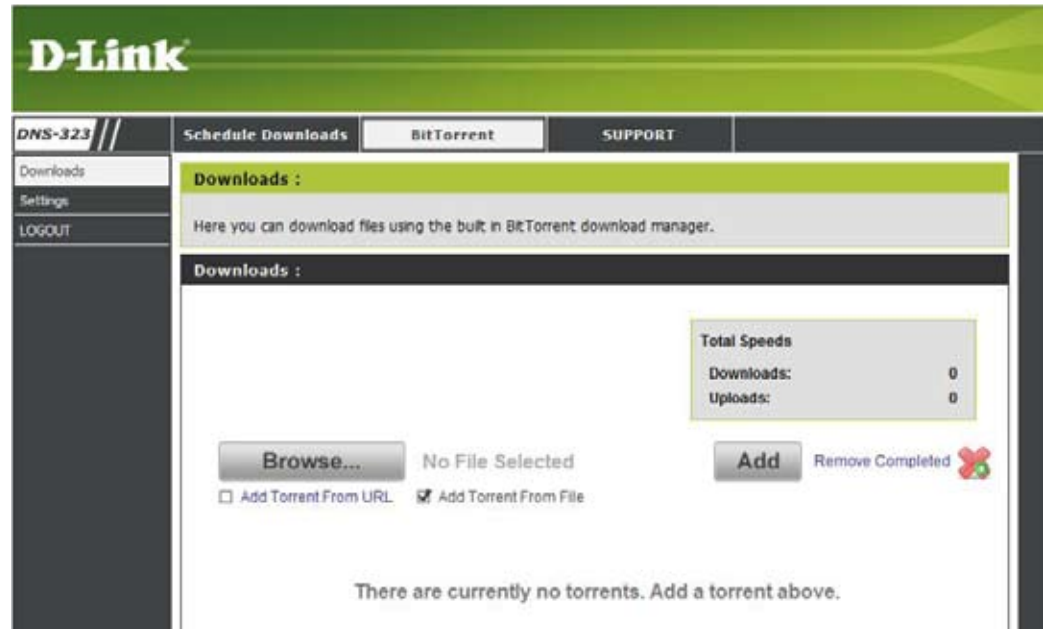


Adding a Torrent From File

To add a Torrent from a File

- Click the **Add Torrent from File** checkbox.
- Click the **Browse** button.
- Navigate to the folder where the Torrents are located on your PC and click the **Add** button.

The Torrent will now appear in the Downloads list.



Torrent Settings

Click the Settings link in the **BitTorrent** menu to change the Bit Torrent settings.

You can use the radio buttons on this screen to customize the Bit Torrent Settings of the DNS-323.

Port Settings Select the appropriate login method to access the files for download. If the site requires login credentials, select **Account** and enter a valid username and password.

Bandwidth Management To manually set the Bandwidth Management click the **Manual** radio button and type in the Maximum download rate, Maximum upload rate and Maximum upload rate when seeding in the appropriate text boxes.

Seeding Select the appropriate seeding option from the radio buttons.

When you have finished click the **Save** button.

The screenshot displays the D-Link DNS-323 web interface. The top navigation bar includes 'DNS-323', 'Schedule Downloads', 'BitTorrent', and 'SUPPORT'. The left sidebar has 'Downloads', 'Settings', and 'LOGOUT'. The main content area is titled 'Settings : Here you can configure your BitTorrent download manager settings.' Below this, the 'Settings :' section contains three main areas:

- Port Settings:**
 - ☒ Default (6881)
 - ☐ Custom

Incoming connections port:
- Bandwidth Management:**
 - ☒ Automatic
 - ☐ Manual

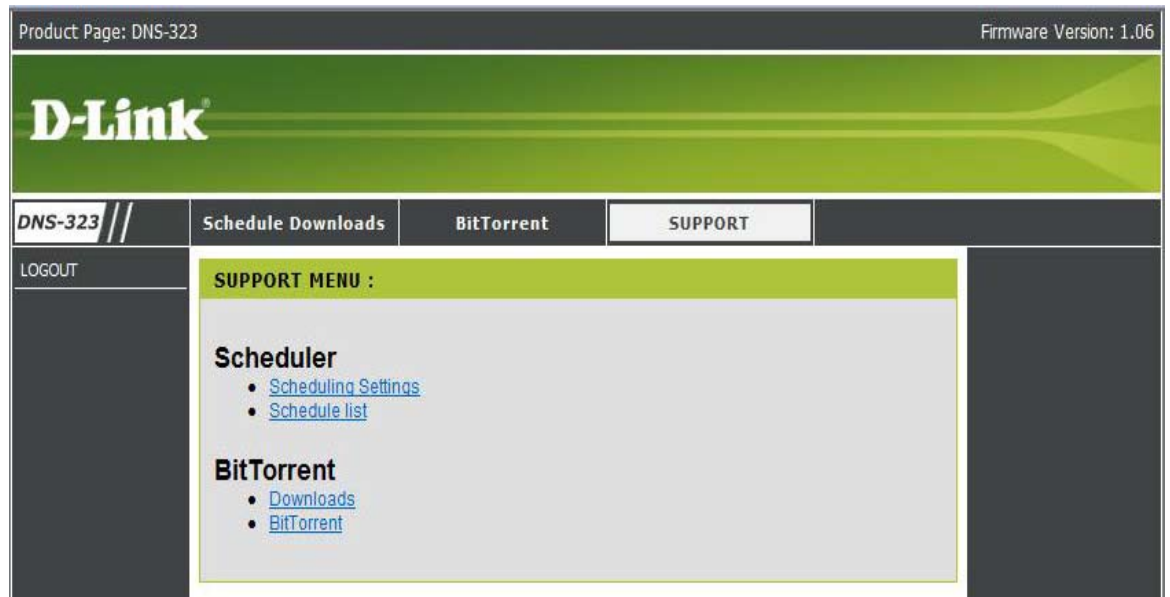
Maximum download rate (kB/s): default: -1 (unlimited)
 Maximum upload rate (kB/s): default: -1 (unlimited)
 Max. upload rate when seeding (kB/s): default: -1 (unlimited)
- Seeding:**
 - ☒ Seed until removed
 - ☐ Stop seeding when ratio reaches %
 - ☐ Stop seeding after (Minutes)

At the bottom right of the settings area are 'Save' and 'Cancel' buttons.

Downloads Support

The DNS-323 features support files to help you with the Downloads features.

Click on the **Support** option to view the Downloads Support files:

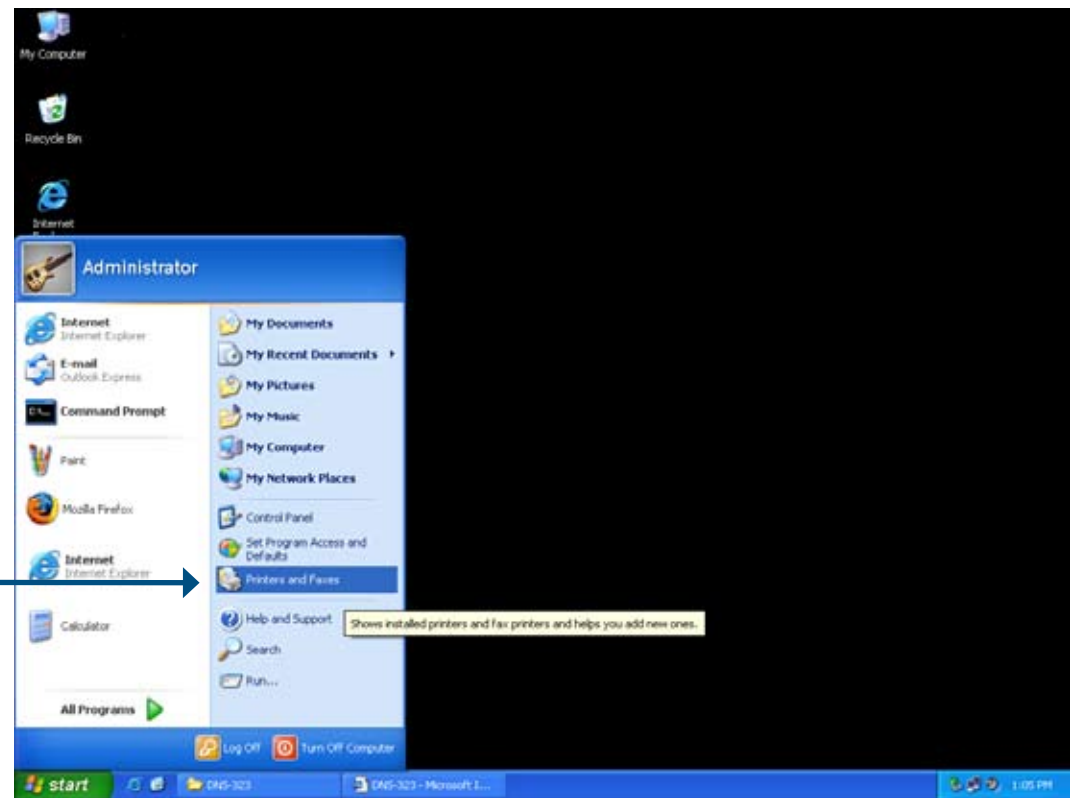


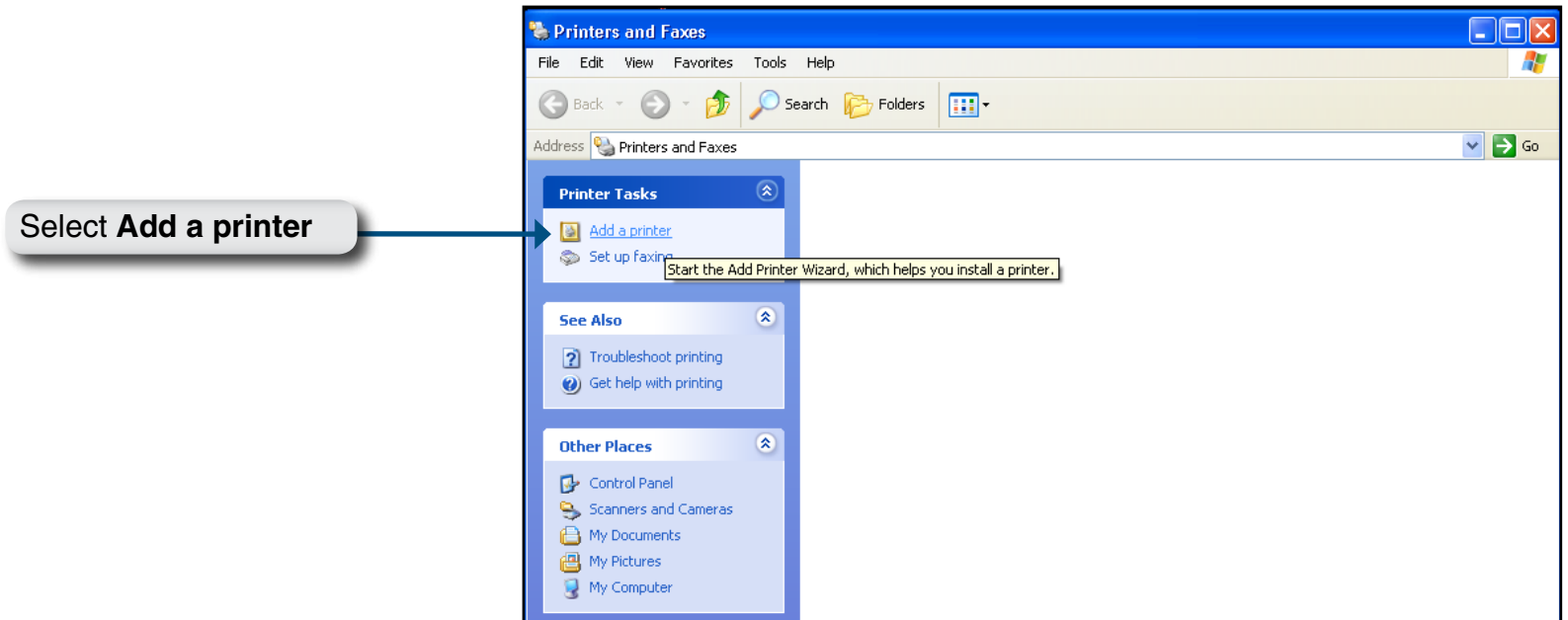
USB Print Server

The DNS-323 features a built-in USB print server, giving users the ability to share a printer on their local network. Connect a USB printer to the USB port on the back of the DNS-323. It is important to ensure that any of the printer manufacturer's drivers are already installed on any computer you want to print from.

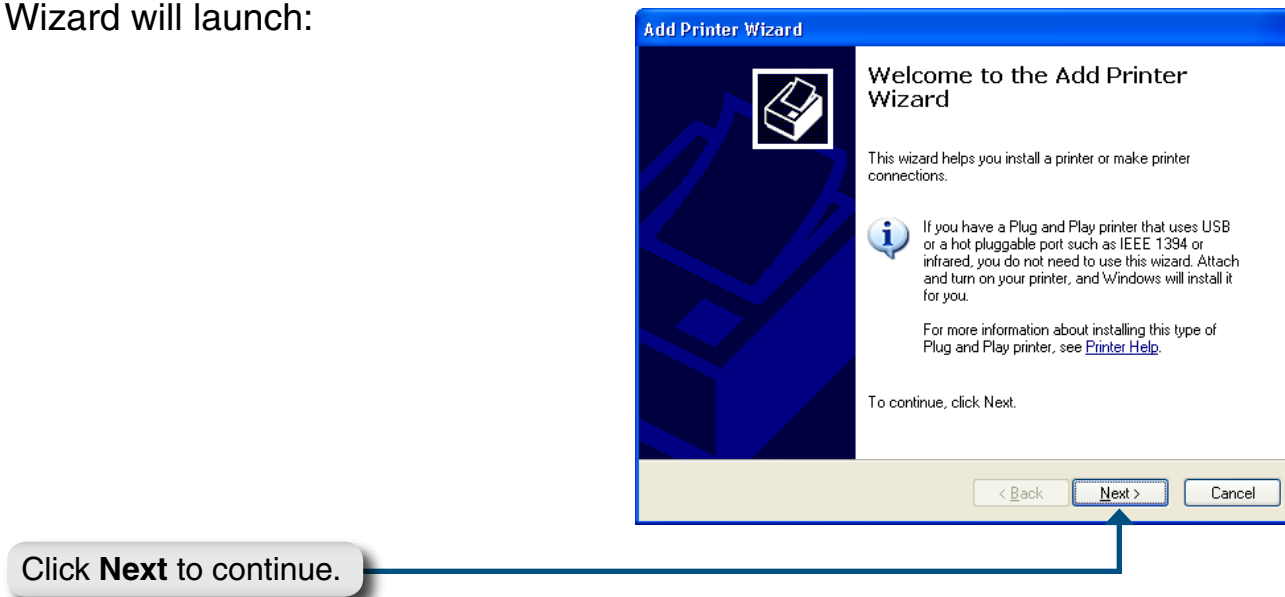
To add a printer:

Click **Start**, and select Printers and Faxes.

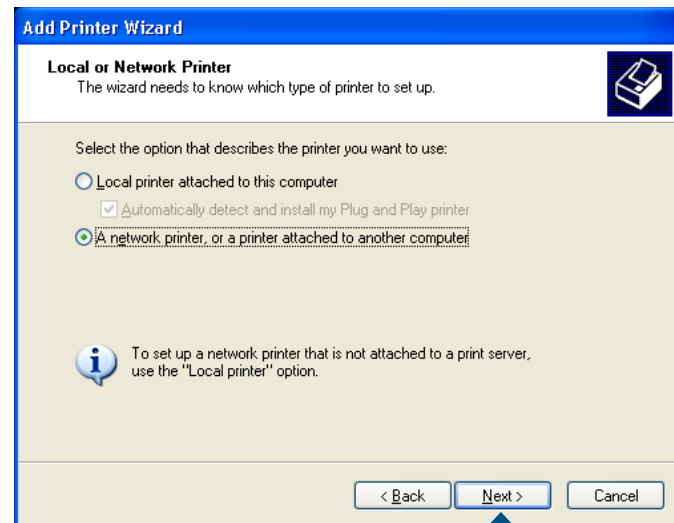




The Windows® Add Printer Wizard will launch:

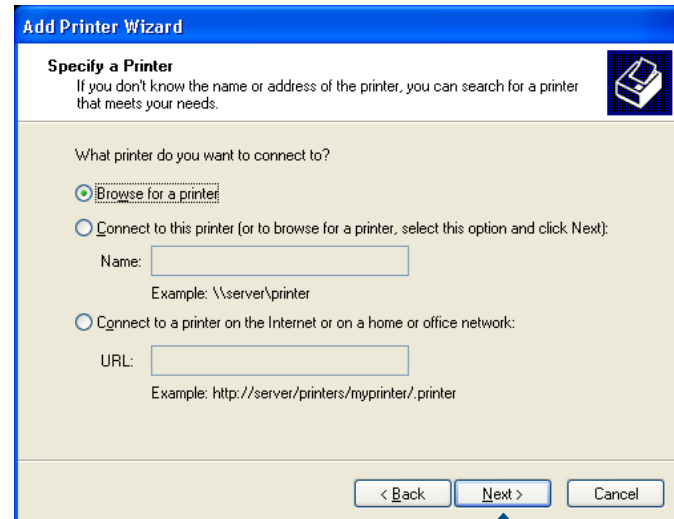


When prompted to choose a local, or network printer, select **A network printer, or a printer attached to another computer**. Click **Next** to continue.



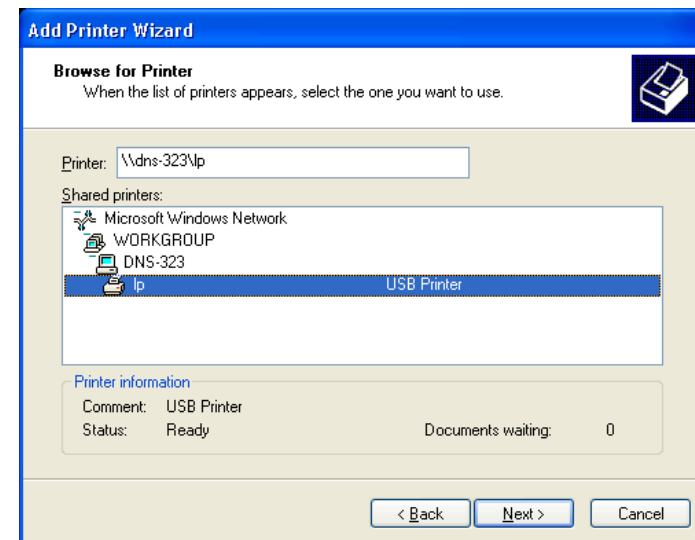
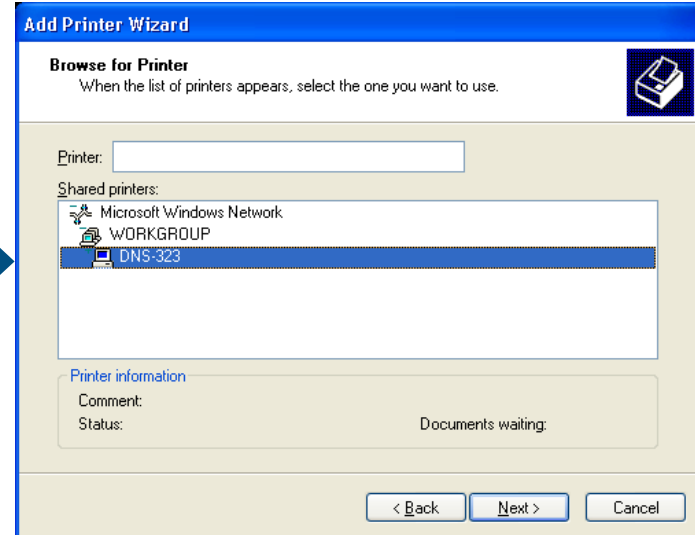
The screenshot shows the 'Add Printer Wizard' window with the title 'Local or Network Printer'. The text below the title says 'The wizard needs to know which type of printer to set up.' There is a printer icon in the top right corner. The main area contains the instruction 'Select the option that describes the printer you want to use:' followed by three radio button options. The first option is 'Local printer attached to this computer' with an unchecked checkbox for 'Automatically detect and install my Plug and Play printer'. The second option, 'A network printer, or a printer attached to another computer', is selected with a green dot. The third option is 'A network printer that is not attached to a print server, use the "Local printer" option.' with an information icon. At the bottom right are three buttons: '< Back', 'Next >', and 'Cancel'.

Select **Browse for a printer** and click **Next** to continue.



The screenshot shows the 'Add Printer Wizard' window with the title 'Specify a Printer'. The text below the title says 'If you don't know the name or address of the printer, you can search for a printer that meets your needs.' There is a printer icon in the top right corner. The main area contains the instruction 'What printer do you want to connect to?' followed by three radio button options. The first option, 'Browse for a printer', is selected with a green dot. The second option is 'Connect to this printer (or to browse for a printer, select this option and click Next):' with a text box for 'Name:' and an example '\\server\printer'. The third option is 'Connect to a printer on the Internet or on a home or office network:' with a text box for 'URL:' and an example 'http://server/printers/myprinter/.printer'. At the bottom right are three buttons: '< Back', 'Next >', and 'Cancel'.

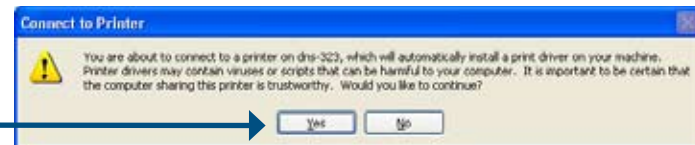
Double-click **DNS-323** from the Shared Printers list to expand the tree.



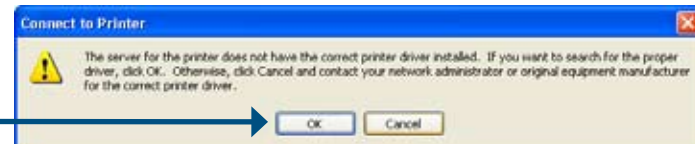
Select the available USB printer, and click **Next** to continue.

The following printer driver messages will appear:

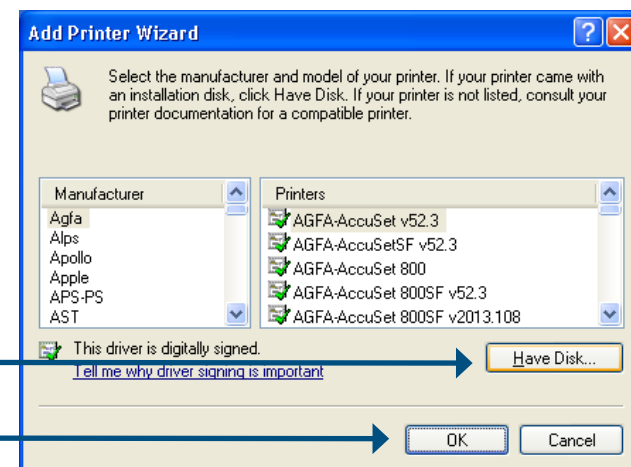
Click **Yes** to continue.



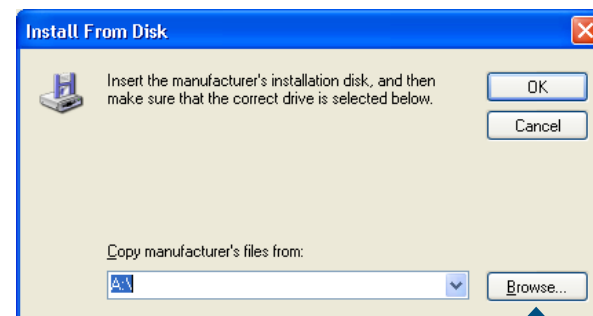
Click **OK** to continue and select a printer driver.



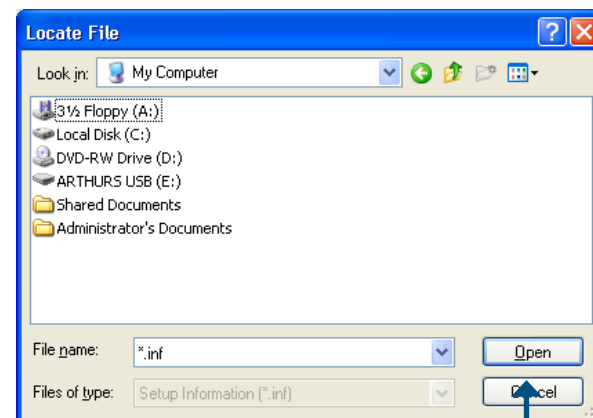
Select the appropriate printer driver from the list and click **OK** to complete the wizard. If the driver is not in the list, select **Have Disk**.



Insert the print driver CD or browse to the appropriate directory.

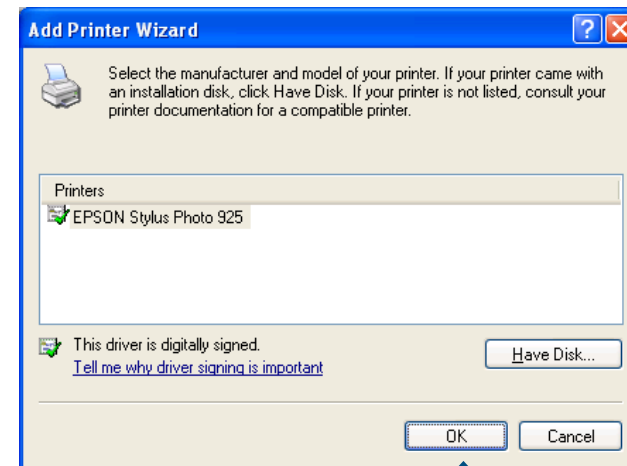


Select the appropriate driver file, and click **Open** to continue.



Click **OK** to continue.



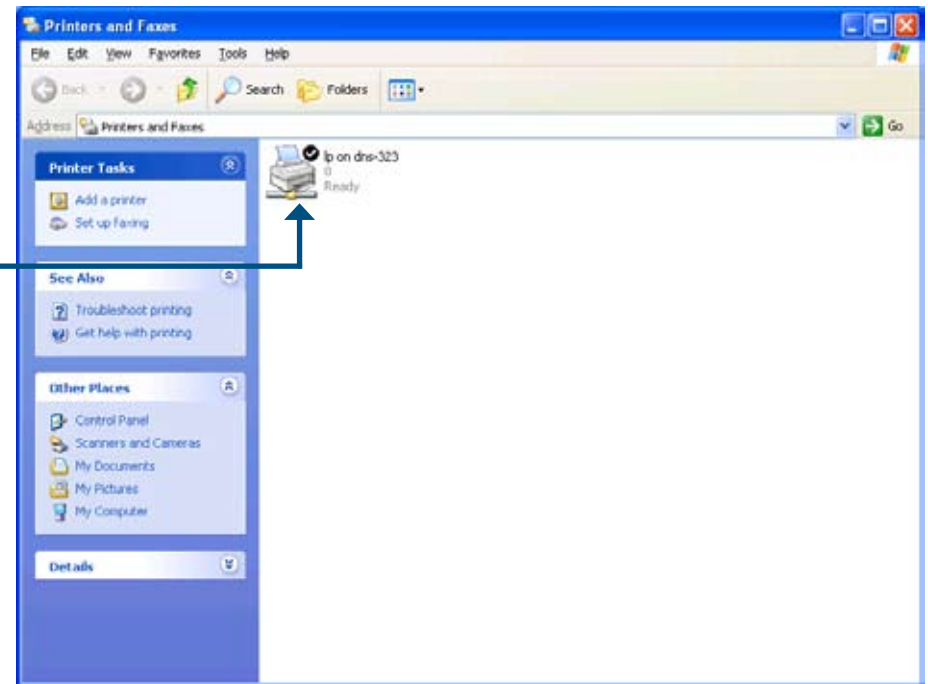


Verify if the driver is correct, and click **OK** to continue.



The wizard will install the printer drivers, and return a completion screen. Click **Finish**.

The printer should now appear as an available printer.



USB Battery Backup

The DNS-323 supports a battery backup, or uninterruptible power supply (UPS). Connect the UPS to the USB port on the back of the DNS-323. You will see the UPS listed on the Device Information window (Status > Device Info) under UPS Info.

To add an uninterruptible power supply, carry out the following steps:

1. Turn off the DNS-323 if it is not already powered down.
2. Connect the UPS to the USB port on the back of the DNS-323.
3. Connect the power of the DNS-323 to the UPS.
4. Turn on the UPS.
5. Turn on the DNS-323.
6. Verify the UPS is properly connected and powered on by going to the Device Information window (pictured on the right) and confirming the UPS is listed in the UPS Info section.

The screenshot shows the 'DEVICE INFO' window of the DNS-323. The window has a sidebar with 'DEVICE INFO' and 'LOGOUT' options. The main content area displays the following sections:

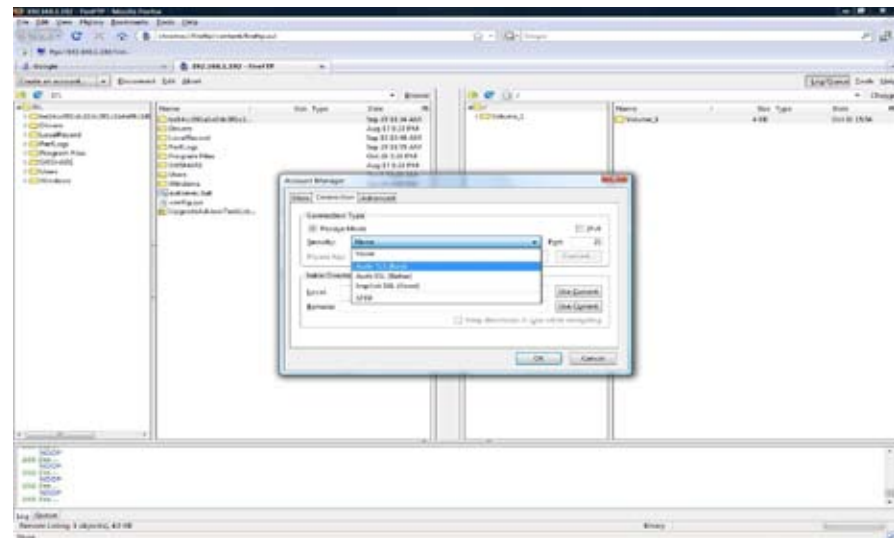
- DEVICE INFORMATION :** View a summary of device information here.
- LAN INFO :**
 - IP Address: 192.168.1.192
 - Subnet Mask: 255.255.255.0
 - Gateway IP Address: 192.168.1.1
 - Mac Address: 00:19:5B:3D:04:D1
 - DNS1: 192.168.1.1
 - DNS2:
- DEVICE INFO :**
 - Workgroup: workgroup
 - Name: DNS-323
 - Description: DNS-323
 - System Temperature: 114°F / 46°C
- PRINTER INFO :**
 - Manufacturer: None
 - Product: None
 - Clear print queue(s)
- HARD DRIVE INFO :**
 - Total Drive(s): 1
 - Volume Name: Volume_1
 - Total Hard Drive Capacity: 983454 MB
 - Used Space: 5538 MB
 - Unused Space: 977915 MB
- PHYSICAL DISK INFO :**

Slot	Vendor	Model	Serial Number	Size
1	Seagate	ST31000340AS	9QJ04LQB	1000 G
2	-	-	-	-

Set the IP address and user account on the Main tab of the Account Manager window to login to the DNS-323 FTP server. Click **OK**.



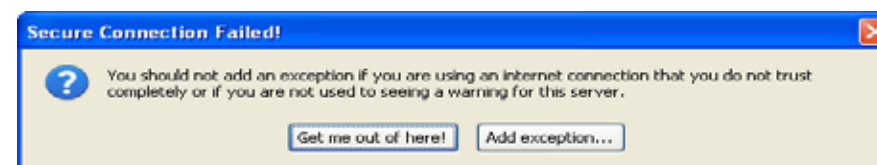
Go to the Connection tab of the Account Manager window and set the security function to “Auth TLS (Best)” mode. Press **OK** to finish the setting.



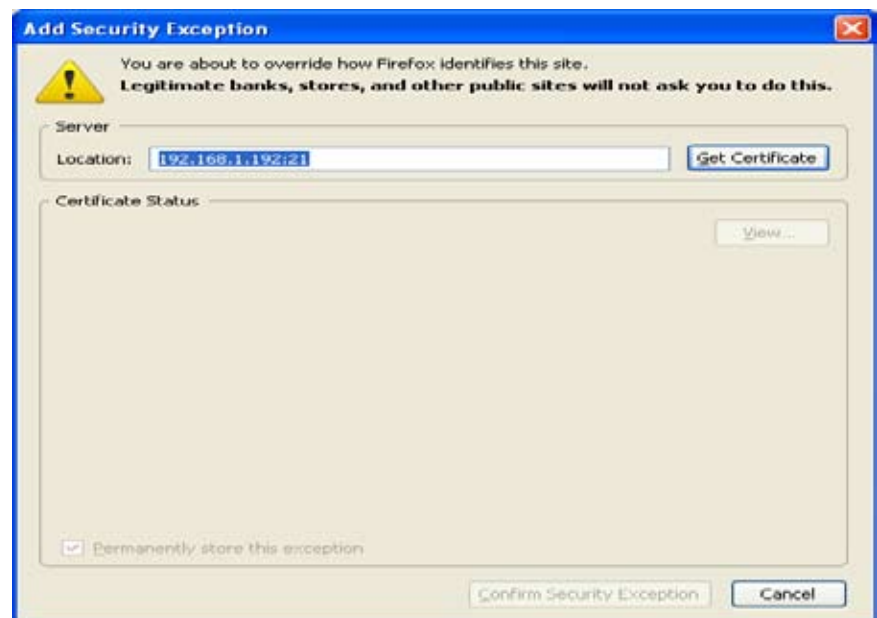
You will now see a series of pop-up warning messages that look similar to these depicted on the right. Click the buttons which are marked with a red frame to continue. Click the **Or you can add an exception...** button.



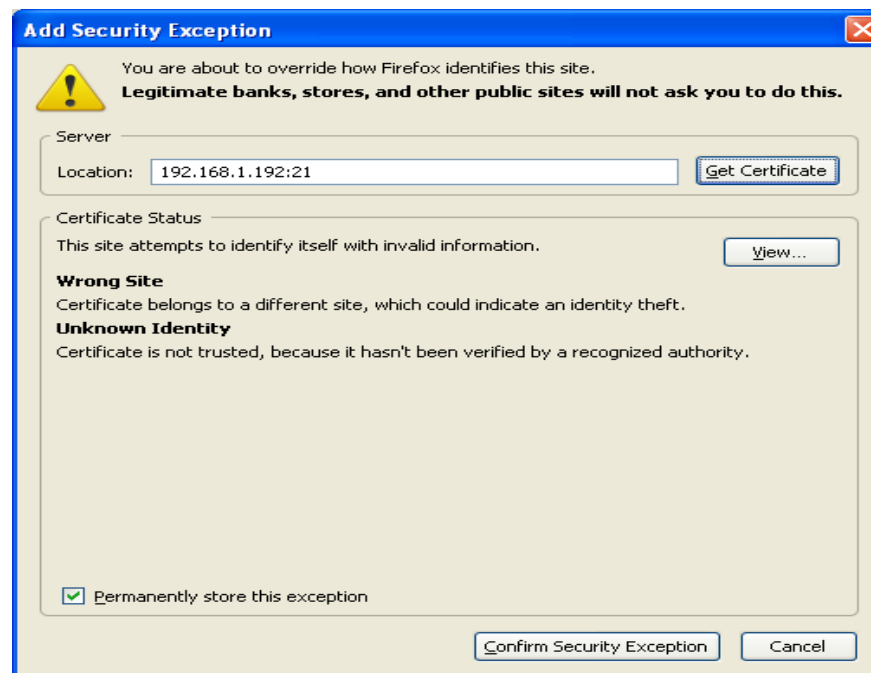
Click the **Add exception...** button



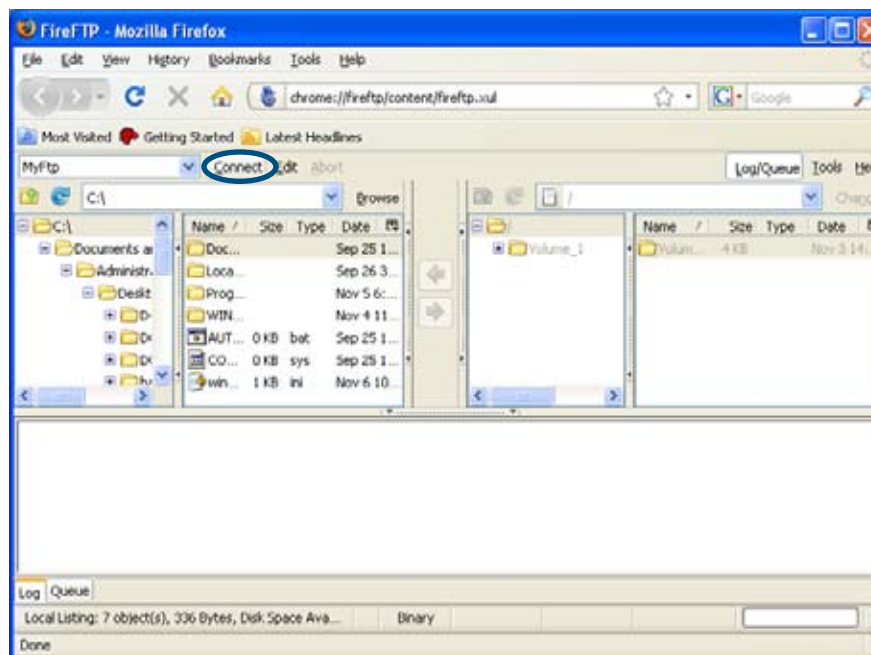
Click the **Get Certificate** button.



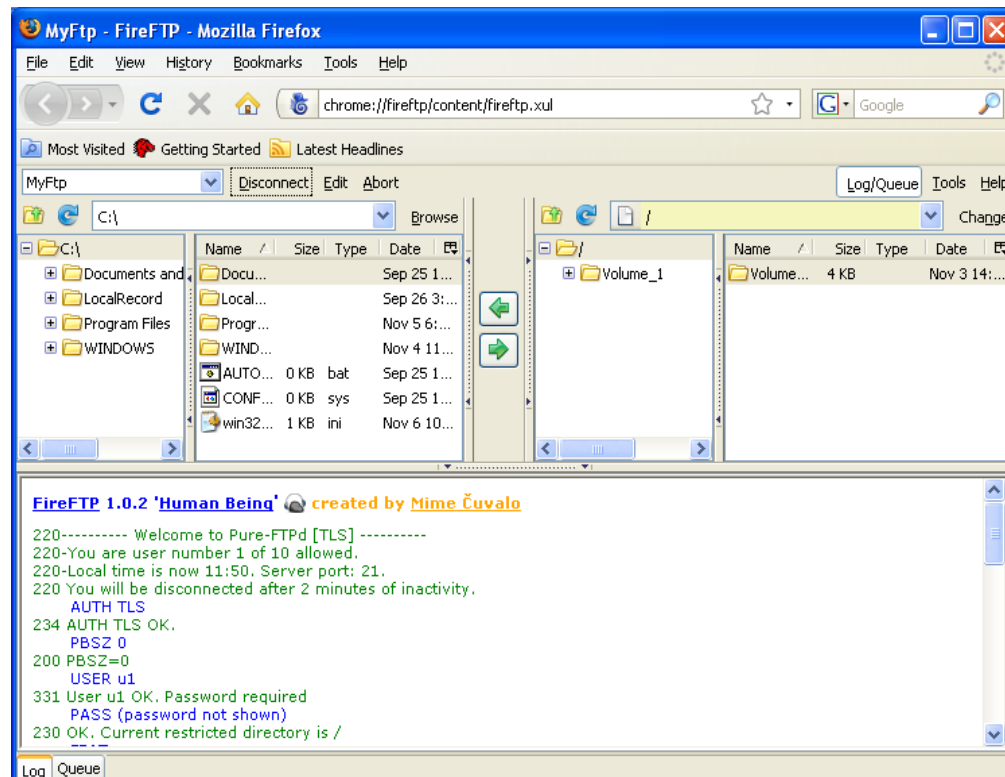
Click the **Confirm Security Exception** button.



Press the **Connect** button to connect to the DNS-323 FTP server.



This window indicates you have made a successful connection.



Storing non-English Character Files

If you are using firmware 1.04 or higher by default, the DNS-323 will support Unicode which is an industry standard allowing computers to consistently represent and manipulate text expressed in most of the world's writing formats. However, if you were using an earlier version of firmware (1.03 or earlier) and have just upgraded to 1.04 or higher, Unicode will not be supported until you have reformatted the hard drives in your DNS-323. If you wish to store non-English character files, but do not want to reformat your hard drives, you will need to change the Language setting of the device to ensure compatibility with those files.

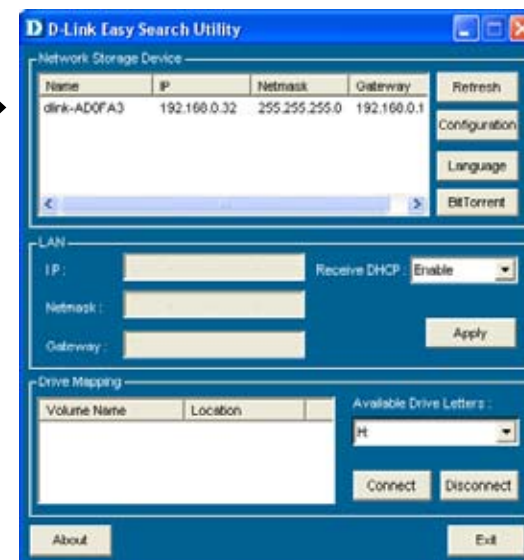
Follow the Easy Search Utility steps below to change the language of your device if you have chosen to not reformat your hard drives.

Insert the DNS-323 CD into your CD-ROM drive.

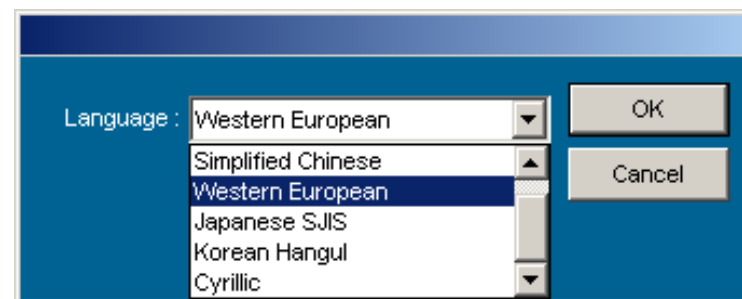
Click **Easy Search Utility**



Highlight an available DNS-323 and click **Language**.



Select the appropriate language from the drop-down menu and click **OK**.



The DNS-323 will restart.

Note: Changing the language setting will NOT change the display language of the user interface. It is only for supporting non-English character file names.

The DNS-323 is restarting. Please wait a moment.



Replacing or Adding a New Hard Drive

It is recommended that you backup your important files before replacing or adding a new hard drive to the DNS-323.

Replacing a Hard Drive:

Please make sure the power is off before replacing a hard drive. After you install the new drive, turn on the DNS-323 and then connect to the Web UI. The DNS-323 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 DNS-323 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 install the new drive, turn on the DNS-323 and then connect to the Web UI. The DNS-323 will prompt you to format the new drive.

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

After you install the new drive, turn on the DNS-323 and then connect to the Web UI. The DNS-323 will prompt you to format the new drive.

You will now have two choices for your disk configuration:

- If you want to configure the new disk as a separate volume, press the **Next** button.
- If you want to configure the new disk in the DNS-323 to use RAID 1, click the **Reconfigure to RAID 1** check box and click the **Next** button.

D-Link **DNS-323**

HARD DRIVE SETTINGS:

Your new, second hard drive will now be formatted. The existing hard drive will not lose any data.

Vendor	Model	Serial Number	Size
WDC	WD7500AAKS-00RBA	WD-WCAPT0272612	750 GB

☐ Reconfigure to RAID 1

Skip **Next**

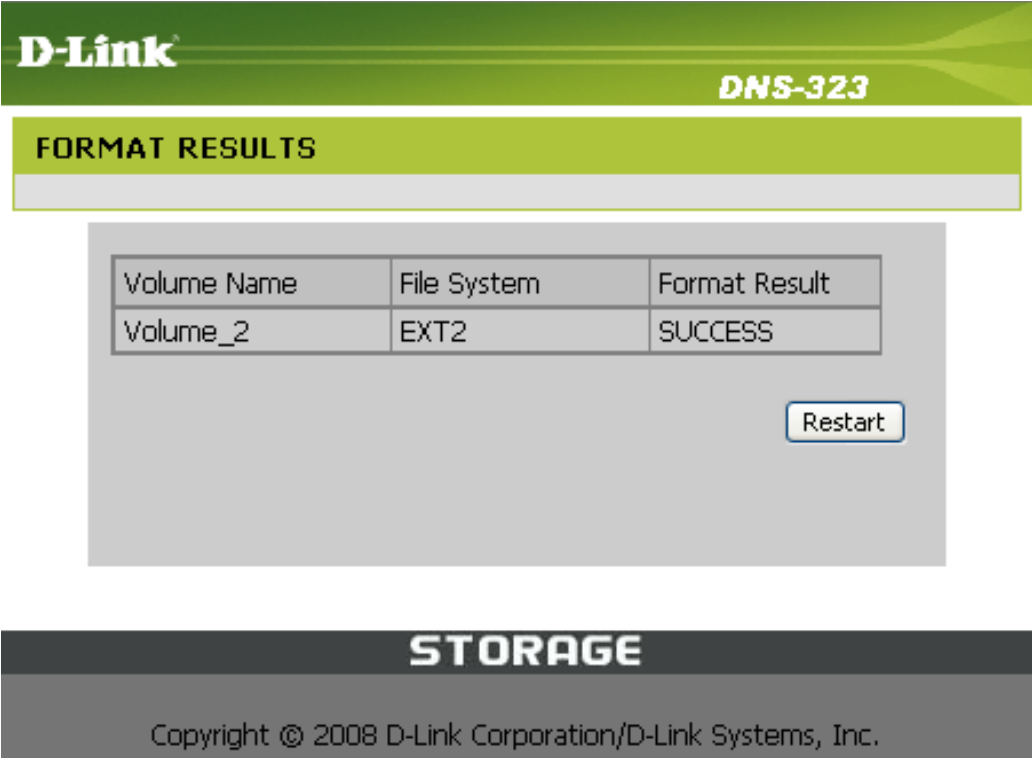
STORAGE

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

The following message will display when the formatting has completed:

Press the **Restart** button to continue.



Contacting Technical Support

Before you contact technical support, please have the following ready:

- Model number of the product (e.g. DNS-323)
- Hardware Revision (located on the label on the bottom of the switch (e.g. rev B1))
- Serial Number (s/n number located on the label on the bottom of the device).

You can find software updates and user documentation on the D-Link website as well as frequently asked questions and answers to technical issues.

For customers within Canada:

Phone Support:

(800) 361-5265

English: 24 Hours - 7 Days

French: Lundi - Vendredi 12h - 21h

Internet Support:

<http://support.dlink.ca>

Warranty

Subject to the terms and conditions set forth herein, D-Link Canada, Inc. (“D-Link”) provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased from D-Link or its authorized reseller or distributor and delivered within Canada.

Limited Warranty:

D-Link warrants that the hardware portion of the D-Link product described below (“Hardware”) will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below (“Warranty Period”), except as otherwise stated herein.

- Hardware (excluding power supplies): One (1) year limited
- Free Technical Support - Basic Installation: Ninety (90) days

The customer’s sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link’s option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty:

D-Link warrants that the software portion of the product (“Software”) will substantially conform to D-Link’s then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days (“Software Warranty Period”), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer’s sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link’s option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link’s functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable

to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty:

The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim:

The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- Customers need to provide their receipt (proof of purchase) even if the product is registered. Without a receipt, no warranty service will be done. The registration is not considered a proof of purchase.
- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-800-361-5265, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number from customer service.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products

sent COD will be rejected by D-Link. Products shall be fully insured by the customer and shipped to D-Link Networks, Inc., 2180 Winston Park Drive, Oakville, Ontario, Canada L6H 5W1. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in Canada, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

- RMA phone number: 1-877-354-6561 Hours of Operation: Monday-Friday, 10:30am – 7:00PM EST

What Is Not Covered:

The Limited Warranty provided herein by D-Link does not cover:

Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

Disclaimer of Other Warranties:

EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability:

TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NONCONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

Governing Law:

This Limited Warranty shall be governed by the laws of the Province of Ontario and the federal laws of Canada applicable herein. Some provinces do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from province to province.

Trademarks:

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CE Mark Warning:

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

Registration



Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

Version 1.3
March 20, 2009