# USER MANUAL

## DNS-346

### VERSION 1.0

**D-Link®**

**STORAGE**

# Table of Contents

# Product Overview

## About this User's Guide

This user's guide provides an insight into the functionality of the DNS-346. This guide is based on the current running firmware/software version available for this product and might touch on some new and exciting topics never seen on this product line and acts as a guide when installing and maintaining this product.

## Introduction

The D-Link DNS-346 4-Bay Network Storage Enclosure shares your documents, photos, music, and videos across the network and on the Internet (via Secure FTP server) so that family members, friends, or employees can access them. This enclosure, which can hold four 3.5" SATA hard drives of any capacity[1], creates a central network point for backing up valuable files.

The DNS-346 shares files over the Internet via the built-in FTP server[2]. Users and groups can be created and assigned to folders with either read or read/write permissions.

Switch between file-based NAS or block-level iSCSI data transfer schemes. NAS allows users to access a wide variety of services. iSCSI allows for high-speed data transfers by utilizing block-level transfers.

The included CD contains D-Link's Easy Search Utility. This utility allows you to locate the DNS-346 on the network and map drives to your computer. Backup software is also included on the CD. This software allows you to back up your files from a computer to the DNS-346 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, high performance features, the DNS-346 is an organized solution for any network. Free up drive space on computers and centralize data on your network with the DNS-346 4-Bay Network Storage Enclosure!

1. Hard Drive(s) not included.
2. Note that use of an FTP Server to access files over the Internet does not provide for secure or encrypted transmissions.

# Package Contents

- D-Link DNS-346 Network Storage Enclosure
- CD-ROM with Manual and Software
- Quick Installation Guide
- Power Adapter (19V / 4.74A)
- Power Cord
- Cat5 Ethernet Cable

| | |
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| | **NOTE:** Using a power supply and power cord with a different voltage than the one included with the DNS-346 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 minimum requirements are recommended on any system used to configure and use the DNS-346:
- 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
- Windows® XP (with Service Pack 2) or Vista™
- 3.5" SATA Hard Drive(s)

# Features

The DNS-346 network storage enclosure is an easy to install data storage platform used for remote access through a private network or from the Internet. The DNS-346 supports up to 4 SATA hard drives and includes the product features listed below:

- Equipped with one 10/100/1000 Mbps auto-MDIX fast Ethernet LAN port
- Jumbo frame support
- 128X64 OLED Display support
- OLED display to show system information, HD status, server status and iSCSI session status
- Embedded SATA 3.5 " HDD interface
- 4-bay Serial ATA hard drive with RAID 0/1/5/10, RAID5 with spare  and JBoD support
- Tool-less hard drive installation
- Single volume supports up to 8TB disk capacity
- Ext2/Ext3 Support
- Supports hot-swap function
- 2 modes supported: Open mode and account mode
- No setup necessary in open mode
- Supports Windows 2000, XP, Vista
- Supports Unicode for Samba server
- Supports user and group management
- Supports quotas for users and groups
- Supports group assignment for Network Sharing and FTP Server
- Active Directory support
- Supports FTP Server
- FTP Server supports SSL/TLS
- FTP Server supports Unicode
- Supports DHCP server
- DHCP and Static IP assignment support

- Supports Real Time Clock (RTC)
- Supports HTTPS management function
- Web-based administrative program is stored in flash ROM of the server
- Supports LLTD
- Equipped with Ultra Cooler (aluminum housing + FAN speed control)
- Thermal sensor for temperature monitoring
- E-mail alert system
- Supports schedule download
- Supports Easy Search
- Supports configuration file save/load
- Supports DDNS
- USB port supports printer server
- USB port supports UPS monitoring
- Auto Power Recovery function with UPS
- iSCSI protocol support
- Supports remote backup
- Supports add-On software and multi-language packages
- Supports NFS Server
- Supports Network Recycle Bin
- Supports Snapshot
- Support VLAN
- Supports SNMP
- Supports Disk Roaming
- Supports online partition resize
- Supports Jumbo Frame

# Hardware Overview

## Front Panel



| COMPONENT | DESCRIPTION | |
|-----------|-------------|---|
| OLED Screen | This screen displays detailed information about the following:<br>System information, HD status, server status and ·iSCSI session status. | |
| Power Button | Use this button to switch the device on or off.<br>To switch on the device press the button once.<br>To switch off the device hold the button down for 5 seconds. | |
| Next Button | Use this button to display the system information (system state), HD status (hard drive state), server status (server status state) and iSCSI session status on the OLED.<br>Press the button once to alternate between the different status screens. | |

## Rear Panel (Connections)



| Drive Eject Levers |
| Power Receptacle |
| Reset Button |

| Gigabit Ethernet Port |
| USB Connector |
| Cooling Fans |

| COMPONENT | DESCRIPTION |
|---|---|
| Drive Eject Levers | Use the provided levers to eject the SATA hard drives. |
| Reset Button | Press this button for more than 5 seconds to reset the unit to factory defaults. |
| Power Receptacle | Connect the 19V / 4.74A power supply to the receptacle. |
| USB Connector | 1x USB 2.0 (Type A) connector. USB Host port for print server or USB UPS monitoring. |
| Gigabit Ethernet Port | Use the Gigabit Ethernet Port to connect the DNS-346 to the local network. |
| Cooling Fans | The cooling fans are used to cool the hard drives and feature speed control. When the unit is first powered on the fans rotate at a low speed and rotate at a high speed when the temperature rises above 49 °C. |

# Using the OLED (Organic light-emitting diode)

The DNS-346 network storage enclosure features an OLED that enables the administrator to easily view information about the DNS-346. The OLED display screen displays information about the network connection status and the number of hard drives installed and the bay IDs they are installed in. The OLED has three different screens:

- **System Information** - This screen shows the following information:
  - o The hostname of the DNS-346
  - o The firmware version
  - o The IP address of the DNS-346
  - o The operating temperature
- **Hard Drive Status** - This screen shows the following information:
  - o The percentage of space used on the hard drives
- **Server Status** - This screen shows the following information:
  - o Whether a printer is connected to the server
  - o The status of the FTP Server
- **iSCSI Status** - These screens shows the following information:
  - o When an iSCSI initiator connects to the DNS-346, these screens will display the IP addresses of the iSCSI initiators.

Press the **Next** button once to alternate between the different **Status** screens.

# Basic Installation

## Hardware Setup

Follow the instructions below to install a hard drive, connect to the network and power on the DNS-346. Open the shipping carton for the DNS-346 and carefully remove and unwrap its contents. Follow the instructions below to set up the DNS-346. If this is the first time using the DNS-346 or if a new hard disk is installed, use the Easy Search utility located on the Installation CD and follow the instructions for setting up, configuring and formatting the new drive.

To install DNS-346 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 an available drive bay. Make sure to align the drive connector to the SATA connector on the bottom edge inside the drive bay of the DNS-346. Gently push the drive in until it connects.

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-346 to your local network via a router or switch, or directly to a computer for configuration.



6.  Connect the supplied power adapter to the power receptacle.

# Software Setup

## Easy Search Utility

When first powered on, during the initial boot sequence, the DNS-346 will wait to be assigned an IP address via DHCP. If it does not receive a DHCP 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-346 for the first time. If you want to change the IP address before logging in or are unable to connect to the DNS-346 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 any DNS-346 devices it detects on the network here. |
| **Refresh:** | Click Refresh to refresh the device list. |
| **Configuration:** | Click Configuration to access the Web based configuration of the DNS-346. |
| **LAN:** | Configure the LAN Settings for the DNS-346 here. Click Apply to save changes to the LAN Settings. |
| **Apply:** | Displays the available iSCSI targets on DNS-346. |
| **iSCSI Drive Mapping:** | Click Connect to connect to the iSCSI target. |
| **Connect:** | Click Management to edit the information. |
| **Management:** | Volumes available for mapping are displayed here. |
| **Drive Mapping:** | Choose an available drive letter. Click Connect to map the selected volume. Click Disconnect to disconnect the selected mapped volume. |
| **Available Drive Letters:** | |
| **About:** | Click About to view the software version of the Easy Search Utility. |
| **Exit:** | Click Exit to close the utility. |
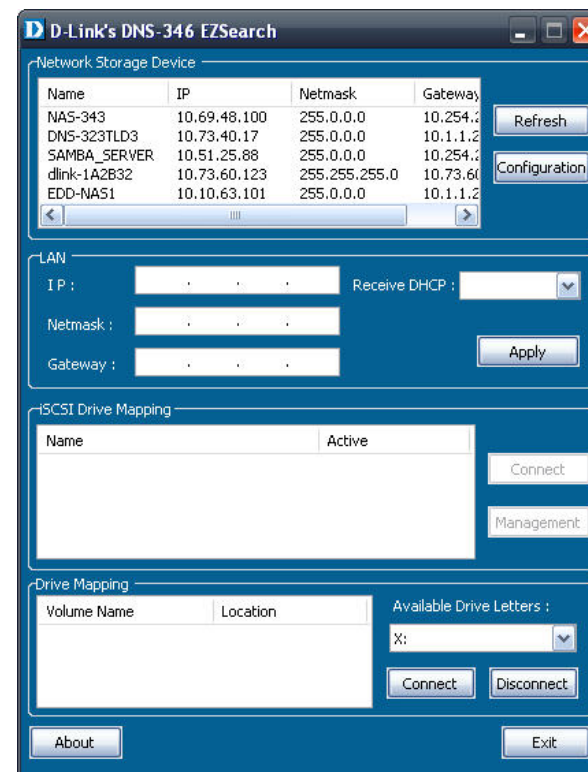
# Getting Started

To run the Easy Search Utility, insert the DNS-346 CD into your CD-ROM drive:

1.  Click Easy Search Utility.



2.  Select the listed DNS-346 and click the Configuration button. This will launch the computer's default web browser and direct it to the IP address listed for the device. Make sure the browser is not configured to use a proxy server.

    The first window that appears will require the user to login to the Configuration or Downloads menus. The Downloads menu is described later in this guide in the section titled Downloads on page 89.
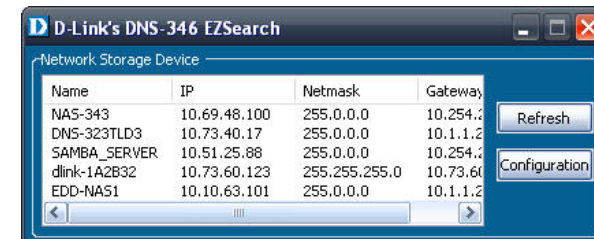


| | NOTE: The computer used to access the DNS-346 web-based configuration manager must be on the same subnet as the DNS-346. If your network is using a DHCP server and the computer receives IP settings from DHCP server, the DNS-346 will automatically be in the same subnet. |
|---|---|

- The Login screen will appear:



| | NOTE: If the web browser is unable to connect to the web manager of the DNS-346, please make sure that your computer is in the 192.168.0.0 subnet. For example, if there is no DHCP server active, your computer will need an IP address in the 192.168.0.0 subnet. Your computer should have an IP address of 192.168.0.x where x equals a number from 1 to 31 or 33 to 254. |
|---|---|

# Web User Interface

The DNS-346 Web UI defaults to the Setup page. The main categories for configuration are located in the menu tabs at the top of the page. The user is able to log out of the device from the Setup, Advanced, Maintenance and Status menus by clicking on the Logout link. The categories available for configuration include:

- **Setup Section** - Contains the DNS-346 setup wizard, LAN setup, time and date settings and device settings.
- **Advanced Section** - Allows the DNS-346 administrator to configure RAID options, iSCSI target settings, users, groups of users, their storage quotas and the Network Access Rights of the user's setup on the DNS-346. The FTP Server, DHCP server, SNMP,  NFS Server,Remote Backup and VLAN settings are also contained here.
- **Maintenance Section** - Allows the DNS-346 administrator to reset the admin password, perform system maintenance tasks, carry out firmware upgrades, configure E-mail alerts, configure power management options, configure Dynamic DNS, change the LCD display settings and get diagnostic information about the installed hard disks.
- **Status Section** - Shows current information about the LAN configuration, device information, printer information, information about the hard drives installed in the DNS-346 and iSCSI Session Information.
- **Support Section** - Contains the DNS-346 help files.

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

| | |
|---|---|
| | **NOTE:** After logging in to the DNS-346 for the first time it is recommended to add a password to the admin account. |

# Setup Section

The setup section contains the DNS-346 setup wizard, LAN setup, time and date settings and device settings.

# Wizard Page

The DNS-346 has a setup wizard that allows you to quickly configure some of the basic device settings. Click the Run Wizard button to start the setup wizard.

**Step 1:** When running the DNS-346 setup wizard, the welcome screen details the five steps of the wizard.

Click on the **Next** button to accept these changes and continue. Click on the **Exit** button to discard these changes.
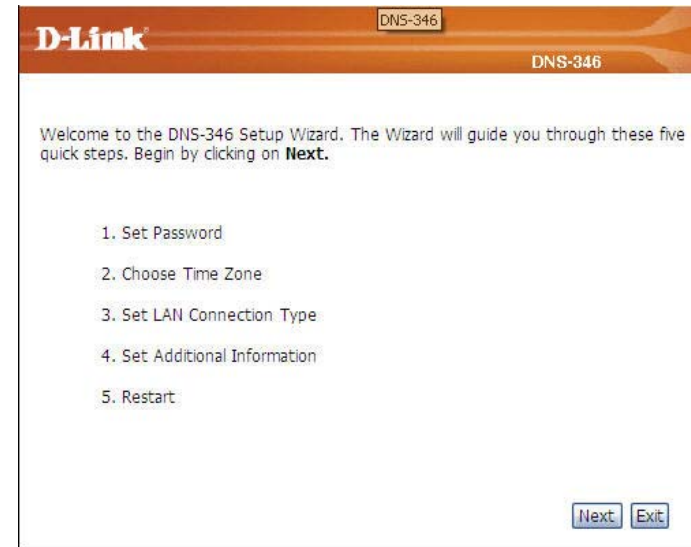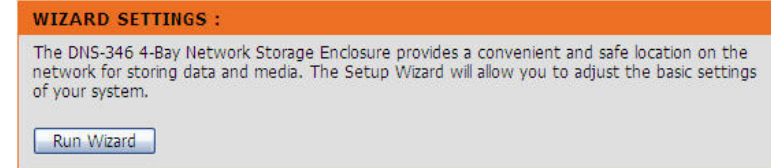
**Step 2:** It is recommended you set an admin password here. Enter the new password and re-enter it for confirmation.

Click on the **Next** button to accept these changes and continue.
Click on the **Back** button to go back to the previous options.
Click on the **Exit** button to discard these changes.

**Step 3:** Set the appropriate time zone here.

Click on the **Next** button to accept these changes and continue.
Click on the **Back** button to go back to the previous options.
Click on the **Exit** button to discard these changes.

Step 4:   Configure the IP settings for your device. If you are using a DHCP server such as a router on your network, the DNS-346 will automatically obtain the IP settings. If you prefer to assign a Static IP address, select this option and type the IP settings for the device.

Click on the **Next** button to accept these changes and continue.
Click on the **Back** button to go back to the previous options.
Click on the **Exit** button to discard these changes.

Step 5:   The following screen allows you to choose your network type. If your network is configured as a Workgroup, click the Workgroup radio button.

Enter the Workgroup, name and description for your DNS-346, or leave the default values.

Click on the **Next** button to accept these changes and continue.
Click on the **Back** button to go back to the previous options.
Click on the **Exit** button to discard these changes.

**Step 6:**  If your DNS-346 will be connected to an Active Directory network, click the Active Directory radio button.

Enter the following information about your Active Directory. **Username, Password, DNS IP Addresses, Name, Workgroup, Realm Name** and **AD Server Name**.

Click on the **Next** button to accept these changes and continue.
Click on the **Back** button to go back to the previous options.
Click on the **Exit** button to discard these changes.

**Step 7:**  Setup completed.

Click on the **Complete** button to accept these changes.
Click on the **Back** button to go back to the previous options.
Click on the **Exit** button to discard these changes.

The DNS-346 will restart.

The DNS-346 is saving the current settings. Please wait a moment.

8
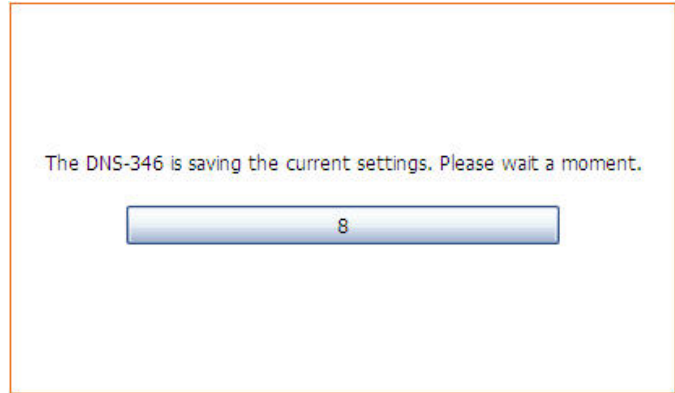
When the login prompt appears, login using the new administrator password.

# LAN Setup Page

The LAN Settings section allows the user to configure the link speed and to configure the IP address as a DHCP client or Static IP.
Enabling Jumbo Frames allows the user to increase the frame size from 3,000 to 9,000 bytes which increases the network throughput and performance. Standard Ethernet frames are 1,500 bytes in size.

**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-346 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-346 manually.

**Jumbo Frames:** The DNS-346 can support Jumbo Frames that are between 3000 and 9000 bytes in size. In order to enable Jumbo Frames on the DNS-346, click the Enable radio button and select the MTU size from the drop-down menu. Click the **Apply** button to save any changes made.

Click the **Save Settings** button to apply and save the new settings. If you have changed the IP address or selected DHCP client, it will be necessary to log in again using the new IP address. If you do not know the new address (which is likely to be the case when changing from a static IP address to DHCP client), use the Easy Search Utility on the Installation CD to obtain the IP address of the device.

# Disk Management Page

The DNS-346 supports seven different disk configuration types:

- **JBOD** – This combines all disks in a linear fashion to create one volume.
- **0** – This option specifies that the disks will be configured as RAID 0.
- **1** – This option specifies that the disks will be configured as RAID 1.
- **5** – This option specifies that the disks will be configured as RAID 5.
- **10** – This option specifies that the disks will be configured as RAID 10
- **Standalone** – This option specifies that each disk will be configured as a separate volume.

| | |
|---|---|
| RAID Configuration: | In this section the user can create, remove and configure RAID configurations. |
| Create: | Click on this button to **add** a new RAID configuration. |
| Remove: | Click on this button to **remove** a RAID configuration. |
| Configure: | Click on this button to **configure** a RAID configuration. |
| Volume Management: | Click on this button to **configure the Volume Management** of the selected RAID configuration. |

**RAID SETTINGS :**

**RAID CONFIGURATION** allows you to setup a RAID configuration on the selected hard drives. Please note that the data stored on the drives will be erased during the formatting process.

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

At most 6 iSCSI volumes can be created on this device.

**RAID CONFIGURATION :**

| ID | Level | Status | Capacity | Disks | Spare | Failed |
|---|---|---|---|---|---|---|
| 1 | Standalone | Normal | 81.07 GB | 1 | | |
| 2 | Standalone | Normal | 81.07 GB | 2 | | |

Create   Remove   Configure   Volume Management

**RAID Create:** When the user click the **Create** button the following screen appears.

**ID:** Type in a number between 1 and 99 to identify the new RAID array.

**Level:** Use the drop-down to choose the level of RAID. The options are JBOD, 0, 1, 5, 10 and Standalone.

**System Disks:** Displays the disks that are installed in the DNS-346.

**Array Disks:** Use the **==>** button to add disks to the new RAID array from the disks listed in the System Disks section. Use the **<==** button to remove disks from the Array.

**Spare Disks:** Use the **==>** button to add spare disks to the new RAID array from the disks listed in the System Disks section. Use the **<==** button to remove spare disks from the Array.
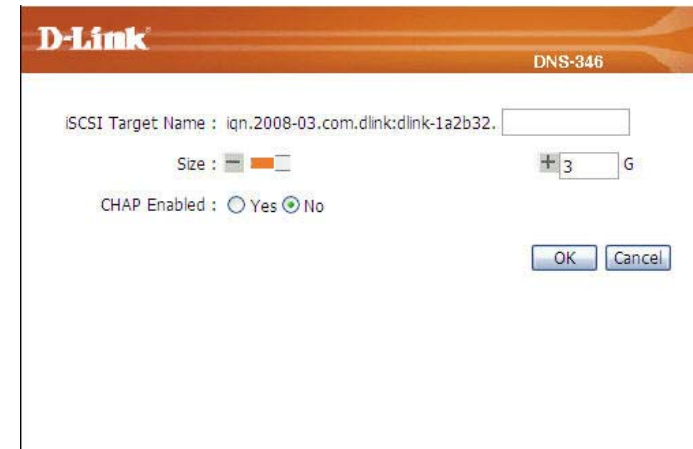
**NAS Space:** Type a value in the **G field** to specify the size of the array in gigabytes. Use the **–** and **+** icons to reduce or increase the size of the array.

**File system:** Choose the type of file system you want to install on the volume. You can choose Linux **Ext2** or **Ext3**.

Click the **OK** button to add the new Array.

The required number of hard drives with different levels of RAID is as explained below:

|  | JBOD | RAID 0 | RAID 1 | RAID 5 | RAID 10 | Standalone |
|---|---|---|---|---|---|---|
| Minimum required hard drive(s) | 2 | 2 | 2 | 3 | 4 | 1 |

| | |
|---|---|
| **RAID Configure:** | When the user clicks the **Configure** button the following screen appears. |
| **System Disks:** | Displays the disks that are installed in the DNS-346. |
| **Array Disks:** | Use the **==>** button to add disks to the RAID array from the disks listed in the System Disks section. Use the **<==** button to remove disks from the array. |
| **Spare Disks:** | Use the **==>** button to add spare disks to the RAID array from the disks listed in the System Disks section. Use the **<==** button to remove spare disks from the array. |
| | Click the **OK** button to save the changes to the array. |



| | |
|---|---|
| **RAID Space Allocation:** | When the user clicks the **Volume Management** button the following screen appears. |
| **NAS Volume Management:** | Click the radio button of the NAS Volume you want to configure. |
| **Create iSCSI Volume:** | Click the **Create iSCSI Volume** button to open the iSCSI Volume Create window. |
| **Resize:** | Click the **Resize** button to open the NAS volume resize window. |
| **Delete:** | Click the **Delete** button to delete the NAS volume. |
| **Back:** | Click the **Back** button to return to the RAID settings window. |
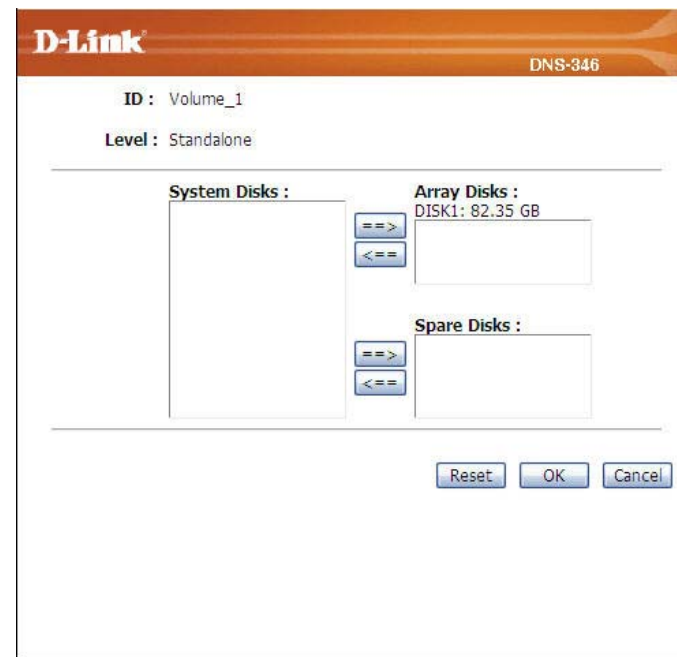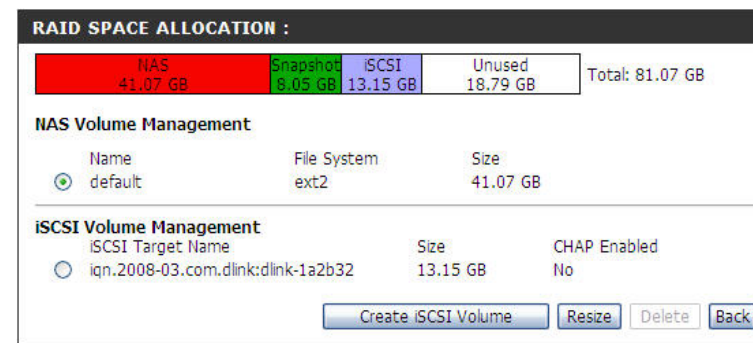
Create iSCSI Volume: When the user clicks the **Create iSCSI Volume** button the following screen appears.

iSCSI Target Name: Type a name in the textbox to identify the new iSCSI Target.

Size: Type a value in the **G** field to specify the size of the iSCSI Target in gigabytes. Alternatively use the **–** and **+** icons to reduce or increase the size of the iSCSI Target.

CHAP Enabled: If the iSCSI initiator supports Challenge Handshake Authentication Protocol, click the Yes radio button. Click the No radio button to disable.

If enabling CHAP you will need to type in the CHAP Username and Password (between 12 and 16 digits) in the appropriate fields.

When you have finished configuring the iSCSI Volume, click the **OK** button.

Remove RAID Configuration: When the user clicks the **Remove** button, a warning message will appear and after clicking OK the RAID Configuration will be removed.
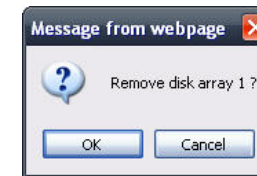
**Auto-Rebuild Configuration:** The Auto-Rebuild feature allows a degraded RAID to **automatically** be rebuilt when a failed hard disk is replaced by automatically restoring data from the existing hard drive to the newly inserted hard-drive.

For example, if a RAID 5 array is in degraded mode and the DNS-346 has the auto-rebuild function enabled, when the user inserts a new hard disk into the DNS-346, the RAID 5 configuration will recover automatically. If the RAID 5 array is in degraded mode and the DNS-346 has the auto-rebuild function disabled the user will have to configure the RAID 5 settings manually after replacing the failed hard disk. The different parameters that appear in the RAID Space Allocation window are explained below:

**Enable Auto-Rebuild:** Click the radio button to **enable** the Auto-Rebuild feature.
**Disable Auto-Rebuild:** Click the radio button to **disable** the Auto-Rebuild feature.

Click the **Apply** button when you have finished configuring the Auto-Rebuild configuration settings.

| | NOTE: Rebuilding will erase all the data on the newly inserted drive. |
|---|---|

# Snapshot Page

Snapshot is a point in time copy of the data in the volume. It is basically an image ("snapshot") of the data on a volume at a specific moment in time (thus the name snapshot). It is essentially a photograph of the state of your data at that moment in time. The snapshot acts as a guide for restoring the storage device in the event that it fails. A snapshot creates a point-in-time copy of the data. Normally, the snapshot is done instantaneously and made available for use by other applications. The original copy of the data continues to be available to the applications without interruption, while the snapshot copy is used to perform other functions on the data.



**Snapshots:** In this section the user can configure and take snapshots of the data on the drives.



**Configure:** Click on the **Configure** button to configure snapshots for the drive listed.

**Take Snapshot:** Click on the **Take Snapshot** button to take snapshots for the drive listed.

When clicking on the **Configure** button, this screen appears:



**ID:** Here the current volume ID will be displayed.

**Status:** Here the user can enable or disable this feature.

**Snapshot Volume Size:** Here the user can set the snapshot volume size.

**Schedule:** Here the user can choose a schedule when the configured snapshots will be taken in the future.

When clicking on the **Take Snapshot** button, this screen will appear.
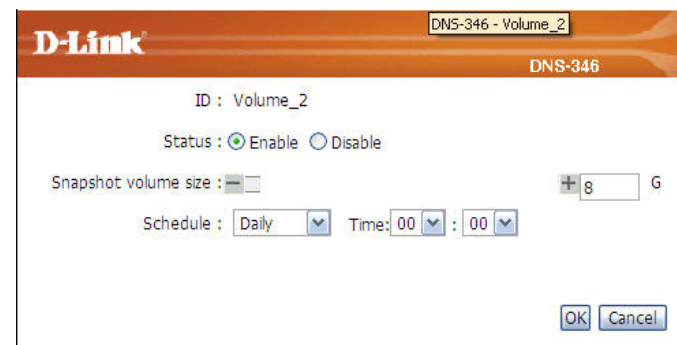
# Time and Date Page

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

**Time Zone:**  Choose the **Time Zone** of where you are located from the drop-down menu.

**NTP Server:**  Click the **Enable** radio button under NTP Server to enable NTP. Network Time Protocol (NTP) synchronizes the DNS-346 with an Internet time server.
Type the URL of the NTP Server in the NTP Server box or use the drop-down menu to choose one of the two time servers that D-Link provides for your convenience.

**Set the Date and Time Manually:**  To set the date and time **manually**, ensure that the NTP Server is disabled and set the date and time using the drop-down menus.

Click on the **Save Settings** button to accept these changes.
Click on the **Don't Save Settings** button to discard these changes.

# Device Page

The device settings page allows the user to configure the Workgroup or Active Directory settings of the network on the DNS-346.

### Configuring the DNS-346 to work in a Workgroup

If the network is configured as a Workgroup, click the Workgroup radio button. Configure the parameters as described below:

**Workgroup:** The Workgroup is used by Microsoft® Windows Network to organize available network groups within the same network.

**Name:** The unique name appears for other network services. The name can be used to access your device from a web browser instead of using an IP address, for example, http://dlink-xxxxxx<http://dlink-xxxxxx> . This is useful when there is more than one DNS-346 on the network.
By default the device name is d-link-xxxxxx, where xxxxxx is the last six digits of the MAC Address.

**Description:** Assigns a device description to help identify the DNS-346 in the workgroup.

Click on the **Save Settings** button to accept these changes.
Click on the **Don't Save Settings** button to discard these changes.

Configuring the DNS-346 to work in a Active Directory

If your network is configured in an Active Directory make sure the following conditions are true:
- Ensure that the Time and Date is synchronized between the DNS-346 and the Windows 2003 Active Directory server. The DNS-346 and Active Directory server will only tolerate a maximum time difference of 5 minutes.
- Ensure that you can get the IP address of the 2003 AD server from the DNS server. The DNS1 and DNS2 settings are the same as the LAN Setup. Please make sure this is working properly.

To configure the DNS-346 to use Active Directory, click the Active Directory radio button and configure the parameters as described below:

| | |
|---|---|
| Username: | Input the username of an account setup on the Active Directory that requires access to the resources on the DNS-346. |
| Password: | Input the password of the chosen Active Directory user account. |
| DNS1: | Input a Domain Name Service (DNS) name for the DNS-346. If the device connecting to the DNS-346 is a browser or logon server this will be the name that these services are advertised by. Input the Active Directory's preferred DNS Server IP address. |
| DNS2: | Input the Active Directory's alternate DNS Server IP address. |
| Name: | Input the Active Directory's name here. |
| Workgroup: | Input the Workgroup of the Active Directory in this field. |
| Realm Name: | Input the Realm Name of the Active Directory in this field. |
| AD Server Name: | Input the name of the AD Server in this field. When the Windows user attempts to access the DNS-346 at login time, the DNS-346 will connect to the 2003 AD Server and attempt to authenticate the given user with the given password. |

Click on the **Save Settings** button to accept these changes.
Click on the **Don't Save Settings** button to discard these changes.

# Advanced Section

The Advanced Section allows the DNS-346 administrator to configure RAID options, iSCSI Target settings Users, groups of users, their storage quotas and the Network Access rights of the user's setup on the DNS-346. The FTP Server, DHCP server, SNMP, NFS Server, Remote Backup and VLAN settings are also contained here.

# iSCSI Page

This section will display a list of all iSCSI targets.

**ISCSI TARGET SETTINGS :**
This section will display a list of all iSCSI targets.

Target List:  This is a list of all iSCSI targets and their storage capacity size.

**TARGET LIST :**
☐ iqn.2008-03.com.dlink:dlink-1a2b32.ses
Delete

# Users and Groups Page

The Users/Groups menu is used to create and manage user and group accounts. These are used for user access and read/write privileges for specified folders on the network drive (using the Network Access menu), or to setup FTP access and privileges. When the DNS-346 is connected to a Workgroup up to 64 users and 10 groups can be created. When the DNS-346 is connected to an Active Directory a combined total of 500 users and groups can be displayed. By default all users have read and write access to all folders but access rules can be created in the Network Access menu.

**USERS / GROUPS SETTINGS:**
This section allows you to create and manage user accounts and groups. You can also configure user and group privileges for specific shared folders. Up to 64 users and 10 groups can be created.

User and Group Creation:  Click the **Users** or **Groups** radio button to enter user or group information in the section below.

**USER AND GROUP CREATION :**
⦿ Users  ◯ Groups

Create a User:  The section appears when clicking the Users radio button. To create a new user, enter a name in **User Name**, and enter a password (between 5 and 8 digits) in **Password** and **Confirm Password**. Select one or more group names in the **Groups** field and click **==>** to add the group(s) into the Add Groups field. Click the **Add a User** button to save the settings and see the user in the User List section.

**CREATE A USER :**
User Name :
Groups :          Add Groups :
group1
Groups :
==>
<==
Password :
Confirm Password :
Add a User

**User List:** Click the Local User List link to see this section. This section displays the existing users. To edit a user, click the corresponding (**Notepad**) '🗒' icon to change its group settings and/or password.

To remove a user from the list, click the corresponding (**Trashcan**) '🗑' icon.



**User and Group Creation:** Click the **Users** or **Groups** radio button to enter user or group information in the section below.



**Create a Group:** This section appears when clicking the Groups radio button To create a new group, enter a name in **Group Name**. Select one or more users in the **Users** field, and click **==>** to add the user(s) into the **Members** field. Click the **Add a Group** button to save the settings and see the group in the Group List section.



**Group List:** Click the Local Group List link to see this section. This section displays the existing groups. To edit a group, click the corresponding icon to change its group settings and/or password.

To remove a group from the list, click the corresponding icon.

# Quotas Page

The DNS-346 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.

**Disk Quota Settings:** Click the **Enable/Disable** radio button to start or stop the Quota setting.

**User Quota Settings:** User quotas are displayed here. Quotas can be edited by clicking on the (**Notepad**) ' ' icon.

By default, all users and groups are displayed on the Quota Settings page, and cannot be deleted. The default quota setting is "Unlimited".
Before adding a quota for a particular user or network access entry, ensure the Quota Status has been enabled.

**Modify Quota:** In the following window use the **–** symbol to decrease the quota and the **+** symbol to increase the quota.
Alternatively type in the size you want the quota to be in megabytes in the **MB** field.
Click the Apply button to make the Quota modification.

**Network Access Quota Status:**   Network Access Quotas are displayed here. Quotas can be edited by clicking on the (**Notepad**) ' ' icon.

By default, all users and groups are displayed on the Quota Settings page, and cannot be deleted. The default quota setting is "Unlimited".
Before adding a quota for a particular user or network access entry, ensure the Quota Status has been enabled.

**Modify Quota:**   In the following window use the – symbol to decrease the quota and the + symbol to increase the quota.
Alternatively type in the size you want the quota to be in Mega Bytes in the MB field.
Click the Apply button to make the Quota modification.

Click on the **Save Settings** button to accept these changes.
Click on the **Don't Save Settings** button to discard these changes.

# Network Access Page

The Network Access settings allow you to assign permissions for 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:**

This section allows you to assign access rights for 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 a specific user or group rules can be created, the default rules must be deleted.

**Folder:** To see the detail of this field, see next page.

**User & Groups:** Select the users and/or groups that you want to assign access rights to a specific folder to.

Choose whether the user/group should have **Read Only** or **Read/Write** access rights to the folder by clicking the corresponding **==>** button

Click the **<==** button to remove the access right.

Tick the **Allow everybody read and write** checkbox to allow all users and groups read and write access to the new folder.

**Oplocks:** 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.

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 Oplocks option to No.

By default Vista has Oplocks enabled and cannot be disabled. If you are having network performance issues with applications sharing files from the DNS-346 you may try to improve performance by setting the Oplocks option to No.

**Map Archive:** The archive bit (on Windows file systems) is used to keep track of the latest status of a file since the last backup (archived). Enable Map Archive by selecting Yes from the drop-down menu. This will map the (Windows) archive bit to the Linux (UNIX) owner execute bit, so as to preserve this part of the file's attribute under a Linux file system. The Linux (UNIX) file system lacks the concept of an archive bit. It is recommended to enable this option if you are performing backups on a Windows system or if you are using applications that require the archive bit. Some backup software will attach this attribute to files that are being stored as backups, and as such, archive bits are used in incremental backups.

**Recycle Bin:** Enable this option to use the Recycle Bin feature.

**Network Access List:** The Network Access List section displays the different Network Access Lists that have been setup on the DNS-346
This section also allows the Network Access Entries setup on the system to be modified or deleted.
Click the (**Notepad**) ' ' icon next to the Network Access entry you want to modify.
Click the (**Trashcan**) ' ' icon next to the Network Access entry you want to remove the entry.

**User & Groups:** Select the users and/or groups that you want to assign access rights to a specific folder to.
Choose whether the user/group should have **Read Only** or **Read/Write** access rights to the folder by clicking the corresponding **==>** button
Click the **<==** button to remove the access right.
Tick the **Allow everybody read and write** checkbox to allow all users and groups read and write access to the new folder.

**Oplocks:** Use the drop-down to change the Oplocks setting for the folder.

**Map Archive:** Use the drop-down menu to change the Map Archive setting for the folder.

**Recycle Bin:** Enable this option to use the Recycle Bin feature.

Click the Apply button to save the changes.
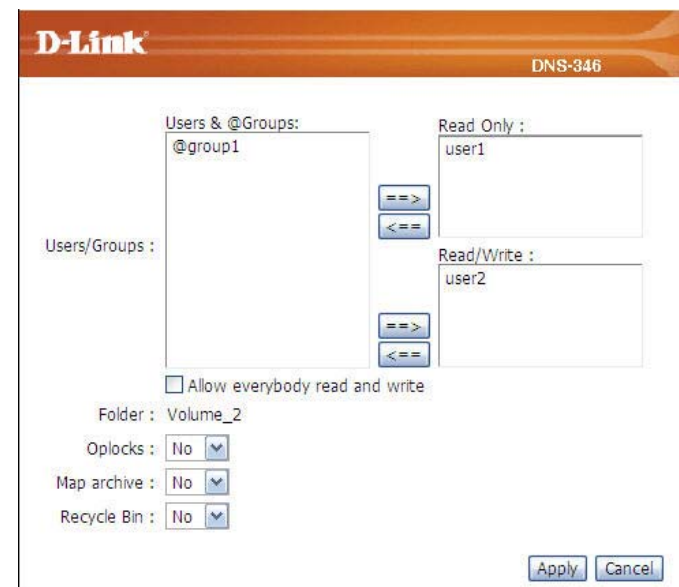
# FTP Server Page

The DNS-346 is equipped with a built in FTP Server. The server is easy to configure and 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-346 at a time.
Configure the FTP Server parameters as described below:

| | |
|---|---|
| **FTP Server:** | Use the radio buttons to enable or disable the FTP Server. |
| **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. |

Click on the **Save Settings** button to accept these changes.
Click on the **Don't Save Settings** button to discard these changes.

---

**NOTE:** To be able to use this function, the FTP port must be set. The default option is port 21.

## FTP Server behind a Router

If you are behind a router, you will need to forward the FTP port from the router to the DNS-346. Additional filtering and firewall settings may need to be modified on your router to allow FTP Access to the DNS-346 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:** | Type a name for the DNS-346 FTP server rule. |
| **IP Address:** | Enter the IP address of the DNS-346. |
| **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. |



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.dns346.com:3000, where the FTP port is 3000).

## FTP over TLS

Below we'll examine FTP over over TLS. For this example we'll use FireFTP. FireFTP is an open-source, cross platform FTP client for Mozilla Firefox users who want to use FTP or FTPS.

**Step 1:** From the Tools menu click FireFTP to open the application in Mozilla Firefox.

**Step 2:** Go to the Quick Connect drop down menu and choose Create an Account.
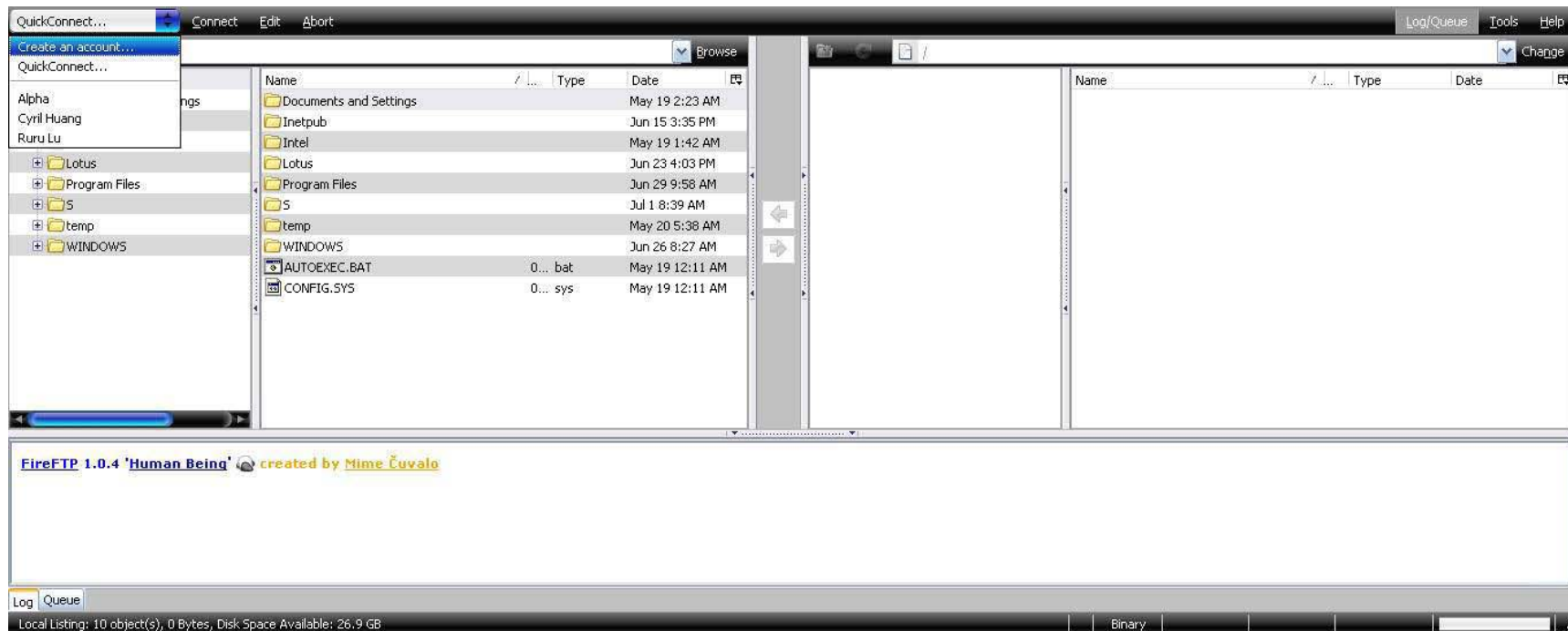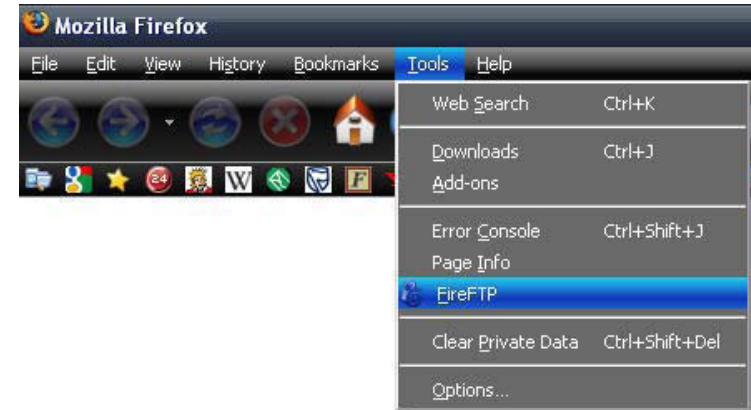
**Step 3:** **Account Name:**

Enter a name for this FTP connection here.

**Host:**

Enter the IP of the DNS-346 in here.

**Login:**

Enter the user's username in here.

**Password:**

Enter the user's password in here.
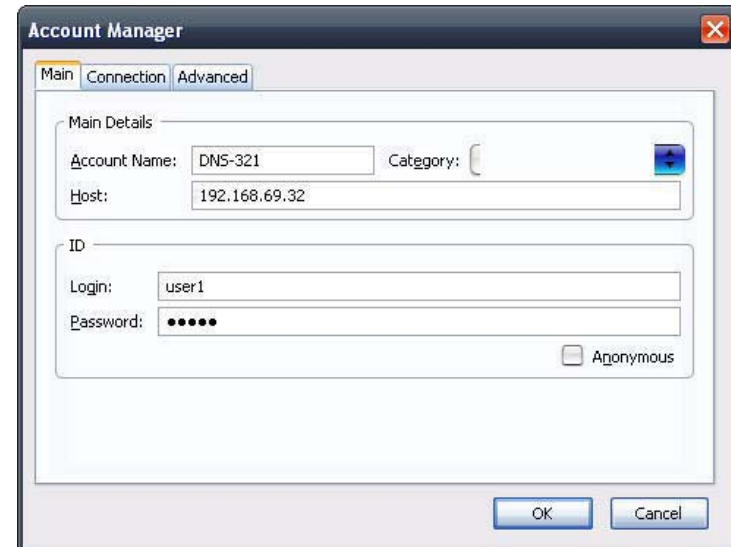
**Step 4:** Go to the **Connection Tab** and set the **Security** function to **Auth TLS (Best).**

Then press OK to finish the setup.
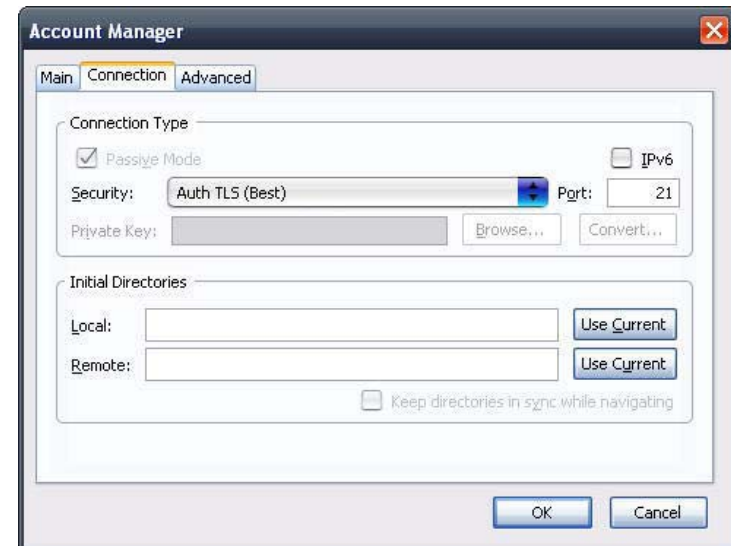
**Step 5:** Firefox and FireFTP will now start a series of security confirmations.

The first warning should look like this.

Click on the "**Or you can add an exception...**" button to accept the security change.

**Step 6:** The second warning should look like this.

Click on the "**Add exception...**" button to accept the security change.

**Step 7:** The next step is to get the certificate for the connection. Click on the "**Get Certificate**" button to acquire the certificate.
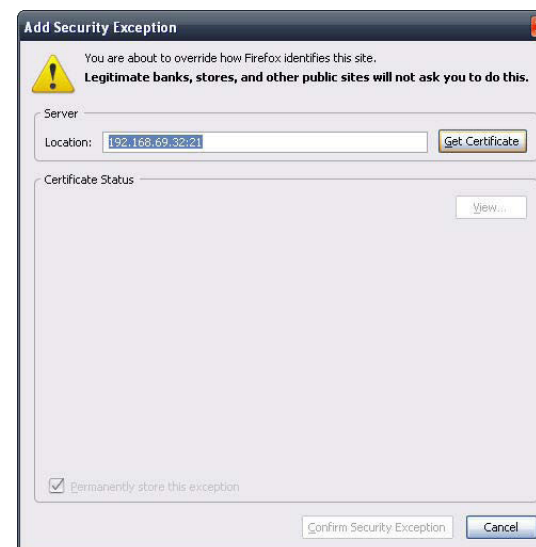
**Step 8:** After the certificate has been acquired click on the "Confirm Security Exception" button to finish the security confirmations.

**Step 9:** Select the newly added FTP connection and click on the Connect option if it has not already connected by itself.

If you can see your files on the right block from the DNS-346, the connection has been established successfully.
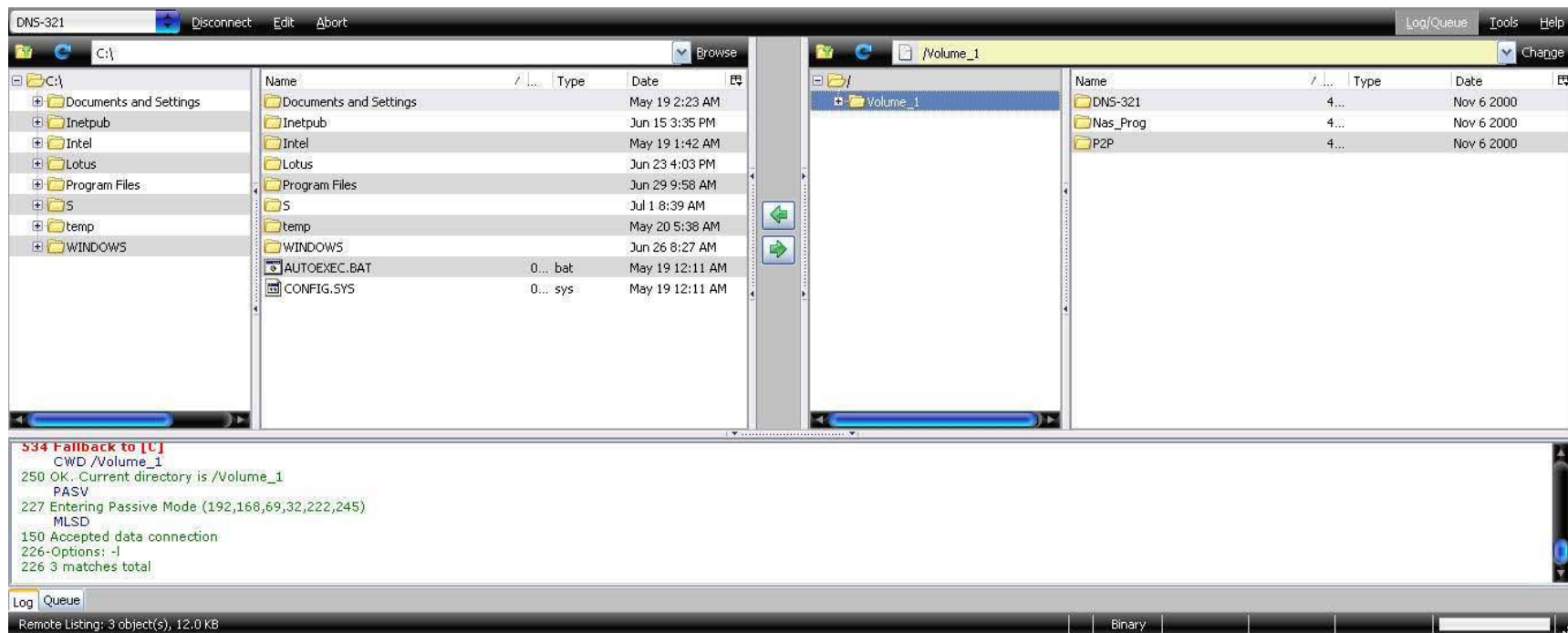
# DHCP Server Page

The DNS-346 can be used as a DHCP Server. As a DHCP server, it can be used to serve IP addresses to 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:** Enables or Disables the DNS-346 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.

# Dynamic DNS Page

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 use the domain name to connect to your server no matter what your IP address is.

**DDNS:** Select Enable or Disable.

**Server Address:** Enter the DDNS server address or select from the drop-down menu.

**Host Name:** Enter your DDNS host name.

**Username or Key:** Enter your DDNS username or key.

**Password or Key:** Enter your DDNS password or key.

**Verify Password or Key:** Re-enter your password or key.

**Timeout:** Enter the timeout time in hours.

**Status:** Displays the status of the DDNS service.

# LLTD Page

The DNS-346 supports LLTD. LLTD stands for Link Layer Topology Discovery and is used to discover network devices by the Network Map application that is included in Windows Vista.

**LLTD Settings:** Click the Enable or Disable radio button to enable or disable the DNS-346 LLTD service.

# SNMP Page

SNMP or (Simple Network Management Protocol) is used in network management systems to monitor network-attached devices for conditions that warrant administrative attention.
SNMP allows the DNS-346 to enable or disable the SNMP function, set the community of SNMP, and the destination of traps / notifications.

**SNMP:** Enable or disable SNMP support.

**SNMP Community:** Community name of NAS, default is "public".

**Notification:** Enable or disable trap support.

**Notification Community:** The community name of the destination of trap.

**Notification IP:** The IP of the destination of trap.

# NFS Server Page

This section allows you to enable the built-in NFS server to share your folders via NFS.



**NFS Server:** To **enable** or **disable** NFS Server.

**Host:** When inputting the host, you can enter an IP address of NFS clients, the fully qualified domain name, netgroups or IP networks, or support wildcards.

**Folder:** Select a shared folder. The folder name does not support 'space' character.

**Root Squash:** When you want to enable 'root squash', the system will map requests from uid/gid 0 to the anonymous uid/gid.



**NFS Client List:** In this section a list of NFS Clients will be listed.

# Remote Backup Page

This section allows you to backup files on the DNS-346 to one or more remote NAS devices in order to prevent data loss in the event of a failure. You can securely backup or recover your data over an encrypted SSH connection.

| | |
|---|---|
| **Type:** | Define your device as the source or destination site. |
| **Source:** | You can simultaneously backup up to 10 folders from this device to multiple destination devices. |
| **Password:** | Assign a password for this source device to prevent unauthorized access. |

| | |
|---|---|
| **Dest. Backup Folder Name:** | Create a unique folder name on the destination device to backup the file(s) into. |
| **Backup From:** | Assign the path of the source device. |

| | |
|---|---|
| **Source Status:** | In the section the user can Start or Stop the remote server by clicking the **Stop Remote Server** button. |

| | |
|---|---|
| **Source Share List:** | Here the user can view edit of remove entries for this section. |

> **NOTE:** To be able to use this function ports number 22, 873 and 62057 needs to be forwarded to this unit from the local network's router's setup.

**Type:** Define your device as the source or destination site.

**Destination::** Indicate the destination device which will receive the backup data from the source device.

**Source IP:** Enter the IP address of the source device.

**Password:** Assign a password for this source device to prevent unauthorized access.

**Save To:** Assign the path where the backup data from the source device will be stored.

**Method:** An incremental backup will be performed by default. Enable this option to keep pre-existing files.

**Destination List:** Here the user can view edit of remove entries for this section.

# VLAN Page

Enable this option only if you located in a VLAN environment. The VID parameter is displayed when the option is enabled.

**VLAN:** Select enable or disable to turn the VLAN feature on or off.

**VID:** Enter the VLAN ID of the DNS-346 located the networking environment.

# Add-Ons Page

In this section you will be able to install application and language packs to further enhance the functionality of your device. This powerful new feature on the device allows users to customize the interface and usability of this unit. Adding features to the unit now only requires an Add-on installation as soon as new features are available. Keep a keen lookout on D-Link's local website for new Add-on releases.



| | |
|---|---|
| **Application Pack:** | Click on "Browse" to search for the specific application pack you want to install. After selecting the application pack, then click "Apply" to install the application pack. |
| **Language Pack:** | Click on "Browse" to search for the specific language pack you want to install. After selecting the language pack, then click "Apply" to install the language pack. |



| | |
|---|---|
| **Add-Ons Summary::** | In this section you can see a summary of the application/language pack(s) you have installed.<br>Under the "Status" column, you can see if a specific pack is currently enabled or disabled.<br>Under the "Start/Stop" column, click the "Start" icon to enable the specified pack. Click on the "Stop" icon to disable the specified pack.<br>Under the "Remove" column, press the (**Trashcan**) '🗑' icon to uninstall the specified pack |



| | |
|---|---|
| 📘 | **NOTE:** Keep a keen lookout on D-Link's local website for new Add-on releases. Please contact the local vendor (D-Link) to find out if there is a language pack available for your local language. |

# Maintenance Section

The Maintenance Section allows the DNS-346 administrator to reset the admin password, perform system maintenance tasks, carry out firmware upgrades, configure E-mail alerts, configure Power Management options, configure Dynamic DNS, change the LCD Display settings and get diagnostic information about the installed Hard Disks.

# Disk Diagnostic Page

The section allows the administrator to perform a diagnostic test on the hard drive(s) and/or the file system to see if there are any errors on the hard drive(s) or the file system.

**DISK DIAGNOSTIC :**

This section allows you to perform a health test on your hard drives. In addition, you can set a schedule for your tests and receive email notifications.

If your hard drive is shown as "Fail" after running a SMART test, please confirm this result by running the hard drive manufacturer's disk diagnostic software on the affected hard drive.

**S.M.A.R.T Test:** Select slot(s) you want to test.

**Test Type:** Select the test type as quick test, or extended test.

**Send result by E-mail:** Tick the Send result by E-mail checkbox to send the test results of the SMART test to your e-mail box. The e-mail settings need to first be configured in the Maintenance -> Email Alerts section.

Click the Create Schedule button to see the Schedule and Schedule List section. You can set a schedule for the SMART test. Click the Start button. During the process, the progress/percentage of the SMART test will be displayed in Progress column. When the test is finished, the result will be displayed in the Result column.

**S.M.A.R.T TEST :**

| Slot | Manufacturer | Model | Progress | Result |
|------|-------------|-------|----------|--------|
| 1 | Hitachi | HDS728080PLA380 | - | Pass |
| 2 | Hitachi | HDS728080PLA380 | - | Pass |

Test Type: ⦿ Quick test  ◯ Extended test

☐ Send result by E-mail

[Create Schedule]  [Start]

**Schedule:** Select to perform the test daily, weekly or monthly, and time from the dropdown list.
Click the Create button to see the entry display in the Schedule List section.

**SCHEDULE :**

[Daily ▾] Time: [00 ▾] : [00 ▾]
[Create]

**Schedule List:** Here the user can view edit of remove entries for this section.

**SCHEDULE LIST :**

| Type | Slot / Volume | Schedule | Delete |
|------|--------------|----------|--------|
| S.M.A.R.T - Quick | Slot 1 | 00:00 / Daily | 🗑 |

**Disk Diagnostic:** Scan Disk will scan your volume's file system for errors and/or corruption. After completion, any errors on your file system will be displayed accordingly.
Select Volume ID(s) you want to scan.
Click the Scan Disk button. Any errors found will be listed.

**Scan Disk Result:** After the Scan Disk process has finished the following windows will display the Scan Disk Result.
Click the OK button to finish viewing.

# Admin Password Page

The Admin menu allows you to set a password for the admin account. It is recommended to set an admin account password when first configuring the DNS-346.

**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.

Click Save Settings to save the new password.

# System Page

The DNS-346 System menu provides options for system restarts, saving and loading configuration settings, and setting idle times.

**SYSTEM SETTINGS:**

This section allows you to restart or shutdown the systems as well as restore the system to its original factory default settings. Restoring the unit to factory default settings will erase all saved 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 also be uploaded onto the system.

**Restart:** Click **Restart** to reboot the DNS-346.

**RESTART :**

System Restart.   [Restart]

**Restore Defaults:** Click **Restore** to reset the DNS-346 to its factory default settings. This will erase all previous configuration changes.

**DEFAULTS :**

Restore To Factory Default Settings.   [Restore]

**Shutdown:** Click **Shutdown** to turn off the DNS-346.

**SHUTDOWN :**

System shutdown.   [Shutdown]

**Configuration Settings:** Click **Save** to save the current DNS-346 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**.

**CONFIGURATION SETTINGS :**

Save Configuration Settings.   [Save]
Load Configuration Settings.   [_____] [Browse...] [Load]

**Idle Time:** Enter the time (in minutes) that the administrator will be allowed to remain idle while accessing the DNS-346 configuration settings or that users will be allowed to remain idle while accessing the download schedule settings.

**IDLE TIME :**

Config Inactivity Timer   [10] (Minutes)
Download Schedule Inactivity Timer   [10] (Minutes)   [Apply]

# Firmware Page

The DNS-346 Firmware Upgrade 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-346 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.

**Firmware Upgrade – Progress:** The following window appears indicating the progress of the Firmware Upgrade:

**Message:** A window will open after the firmware upgrade stating that the firmware update was successful and that the unit will reboot.
Click the **OK** button to continue.
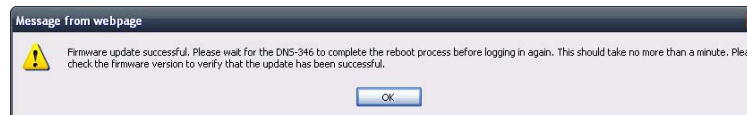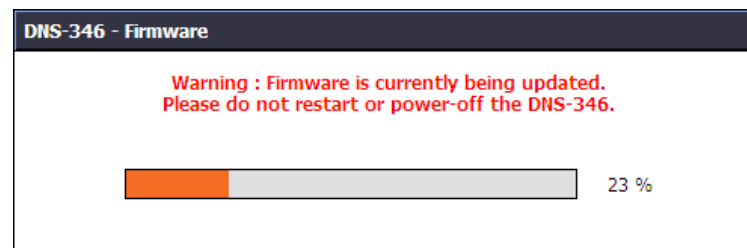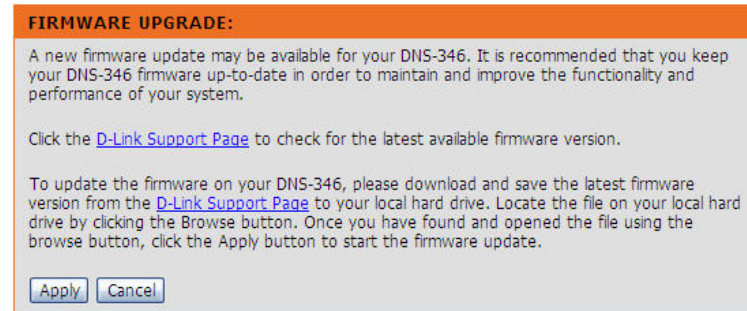
# E-mail Alerts Page

With the DNS-346 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.

| | |
|---:|:---|
| **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@dns346.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 you want to send the alerts to. 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. |

## System Alert Type.

**Admin Password Change:** An alert will be sent if the admin password is changed.

**Firmware Has Been Upgraded:** An alert will be sent if the firmware is upgraded.

**Network Setting Changed:** An alert will be sent if the network settings of the DNS-346 are changed.

**System Temp. Exceeded:** An alert will be sent if the DNS-346 device exceeds the set threshold. After the alert has been sent, the DNS-346 will power off for safety.

**Send S.M.A.R.T. Test Result:** A test result will be sent if the DNS-346 performs S.M.A.R.T. test. The test can be performed in **Maintenance** -> **Disk Diagnostic**.

## RAID Operations Type

**Disk Inserted:** An alert will be sent if a new disk is inserted into the DNS-346.

**Disk Removed:** An alert will be sent if a disk is removed from the DNS-346.

**RAID Created:** An alert will be sent if a new RAID array is created on the DNS-346.

**RAID Removed:** An alert will be sent if a RAID configuration is removed from the DNS-346.

**RAID Configured/Rebuilt:** An alert will be sent if the user configures an existing RAID array on the DNS-346.

**RAID Extended:** An alert will be sent if the user extends the size of an existing RAID array on the DNS-346.

RAID Status Type

RAID Status (Normal): An alert will be sent when the RAID status becomes NORMAL after being rebuilt from DEGRADED mode.

RAID Status (Degraded): An alert will be sent when the RAID status becomes DEGRADED after a disk has been removed or has failed.

RAID Status (Crashed): An alert will be sent when the RAID volume has CRASHED (RAID status is listed as CRASHED). The CRASHED volume occurs when the array does not have enough working disks to support the type of RAID implementation.

RAID Status (Rebuilding): An alert will be sent when the RAID array is being rebuilt after a failed disk has been replaced.

Volume Operations Type

Volume Created: An alert will be sent if a new volume is created on the DNS-346.

Volume Removed: An alert will be sent if a volume is removed on the DNS-346.

Volume Resized: An alert will be sent if the size of the volume has been changed on the DNS-346.

# LCD Settings Page

The LCD Display Settings allow the administrator to change the time it takes for the OLED screen on the front of the DNS-346 to power off.

**Sleep:**   Click on the drop-down box below to change the time it takes for the OLED screen to power off.

Click on the **Save Settings** button to accept these changes. Click on the **Don't Save Settings** button to discard these changes.

# Power Management Page

The DNS-346 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.

**Power Management:**   Use the radio buttons to Enable or Disable the Power Management feature.

**Hibernate Hard Disks:**   Use the drop-down menu to set the amount of time before idle drives will be shut down.

**Power Recovery:**   Enable this feature to turn Power Recovery on.

Click on the **Save Settings** button to accept these changes. Click on the **Don't Save Settings** button to discard these changes.

# Status Section

The Status Section shows the current information about the LAN configuration, Device information, Printer information, information about the hard drives installed in the DNS-346 and iSCSI Session Information.

# System Info Page

You can view system information here.



**LAN Info:**  Displays the local network settings of the DNS-346



**System Info:**  Displays the Workgroup, name, description and current temperature of the DNS-346.



**USB Device Info:**  Displays information for a connected USB printer or UPS. If your computer is having problems printing to the DNS-346, you can click the **Clear print queue(s)** button to remove any print jobs that may be causing your computer not to print.



**NAS Volume Info:**  Displays information regarding all NAS volumes on the DNS-346. This information includes the total volume size, used space, and unused space of every NAS volume.



**iSCSI Session Info:**  Displays information about any iSCSI Sessions that have been setup on the DNS-346.

# Hard Drive Info Page

This window displays the manufacture, model name, serial number, temperature, size and status of the hard disks installed in the DNS-346, along with the slot they are installed in. You can view the S.M.A.R.T. information for each hard disk installed in the DNS-346 (if the hard disk supports the S.M.A.R.T. feature).

**HARD DRIVE INFORMATION :**
View a summary of hard drive information here.

**Hard Drive Info:** To see the S.M.A.R.T. information of a hard disk, click the corresponding **Normal** button in Status column.

**HARD DRIVE INFO :**
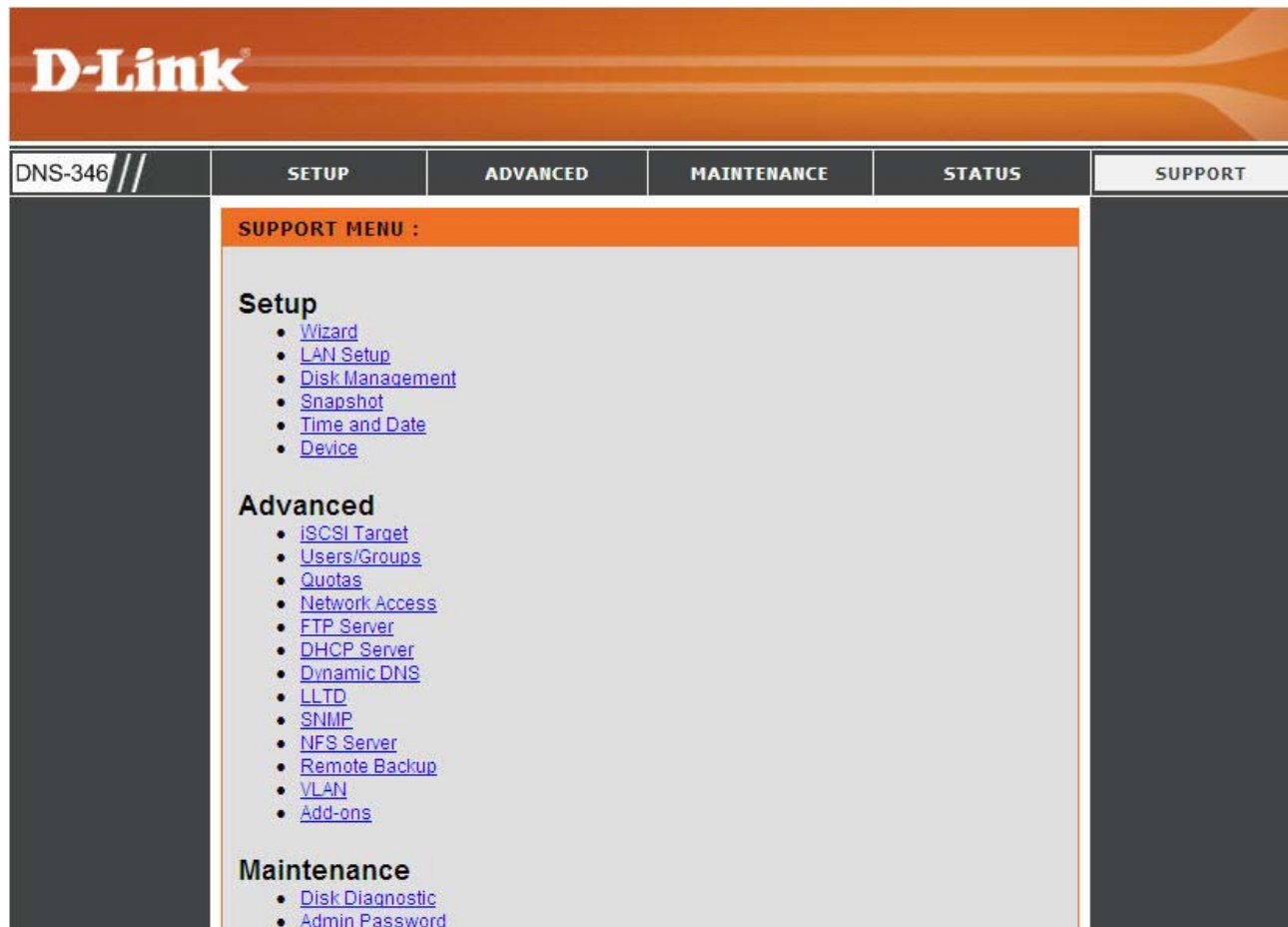
| Slot | Manuf. | Model | Serial Number | Temp. °C/°F | Size | Status |
|------|--------|-------|---------------|-------------|------|--------|
| 1 | Hitachi | HDS728080PLA380PFDBW3SWT68RNH | 40/104 | 82.35 GB | Normal |
| 2 | Hitachi | HDS728080PLA380PFDBW3SWT2VV4H | 48/118 | 82.35 GB | Normal |
| 3 | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - |

**Slot 1 S.M.A.R.T. Info:** After clicking the **Normal** button, the S.M.A.R.T. test results for the corresponding Hard Drive will be displayed.

**SLOT 1 S.M.A.R.T INFO :**

| Id | Item | Now | Worst | Thresh | Raw Value |
|----|------|-----|-------|--------|-----------|
| 1 | Raw_Read_Error_Rate | 099 | 099 | 016 | 196608 |
| 2 | Throughput_Performance | 100 | 100 | 050 | 0 |
| 3 | Spin_Up_Time | 102 | 102 | 024 | 196 |
| 4 | Start_Stop_Count | 100 | 100 | 000 | 528 |
| 5 | Reallocated_Sector_Ct | 100 | 100 | 005 | 3 |
| 7 | Seek_Error_Rate | 100 | 100 | 067 | 0 |
| 8 | Seek_Time_Performance | 100 | 100 | 020 | 0 |
| 9 | Power_On_Hours | 100 | 100 | 000 | 1263 |
| 10 | Spin_Retry_Count | 100 | 100 | 060 | 0 |
| 12 | Power_Cycle_Count | 100 | 100 | 000 | 394 |
| 192 | Power-Off_Retract_Count | 100 | 100 | 050 | 563 |
| 193 | Load_Cycle_Count | 100 | 100 | 050 | 563 |
| 194 | Temperature_Celsius | 137 | 137 | 000 | 40 |
| 196 | Reallocated_Event_Count | 100 | 100 | 000 | 4 |
| 197 | Current_Pending_Sector | 100 | 100 | 000 | 0 |
| 198 | Offline_Uncorrectable | 100 | 100 | 000 | 0 |
| 199 | UDMA_CRC_Error_Count | 200 | 253 | 000 | 0 |

# Support Section

The DNS-346 Support page provides a menu of support topics explaining the features of the device.

# Schedule Downloads Section

In the Schedule Downloads Section this user can schedule downloads of files and folders from an FTP server, web server, or local network share.

# Scheduling Page

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

| | |
|---|---|
| **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.<br>E.g. ftp://123.456.789/Test<br>ftp://123.456.789/test.txt<br>http://www.test.com/test.txt |
| **Test:** | Click **Test** to test the URL is valid and the user name and password are correct. |
| **Select Folders:** | Click **Select Folders** to set the source file or folder from one of the internal drive volumes. Browse to the file or folder, and click OK to accept the network path. |
| **Save To:** | Enter a valid destination drive on the DNS-346, or click Browse and browse to 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. Ticking incremental backup will have the DNS-346 compare identical file names at the source and destination. Files will only be overwritten if the source file is more recent. |
| **Schedule List:** | The Schedule List will display all completed, active, and pending scheduled downloads and backups. |

# Status Page

Pending and completed download events will be listed here. The current status for each event is displayed here. In addition, there is an option to delete a download event at any time. Current download statistics, such as % completed and download speed, are displayed for each event. A refresh button is also provided to produce updated listings at any time.

| | |
|---|---|
| **O** | Download Success. |
| **X** | Download Fail. |
| **?** | Download has not yet occurred. |
| **W** | Waiting. |
| **L** | Link File. |
| | The file is downloading. |

# Support Page

The DNS-346 Support page provides a menu of support topics explaining the features of the device.

# Knowledge Base

## 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 one providing a different method of sharing or distributing data among the drives. The DNS-346 supports JBOD, RAID 0, RAID 1, RAID 5, RAID 10 and Standalone.

**RAID 0:**  RAID 0 provides data striping, which spreads out blocks of data over all 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.
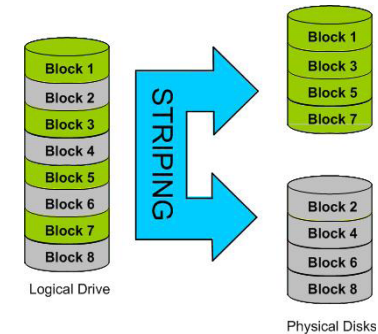
**RAID 1:**  RAID 1 provides mirroring over multiple disks, with the same read/write speed of a single disk. A RAID 1 array can only be as large as its smallest member disk.
Because the data is stored on multiple disks,
RAID 1 provides fault tolerance and protection, in addition to performance advantages.
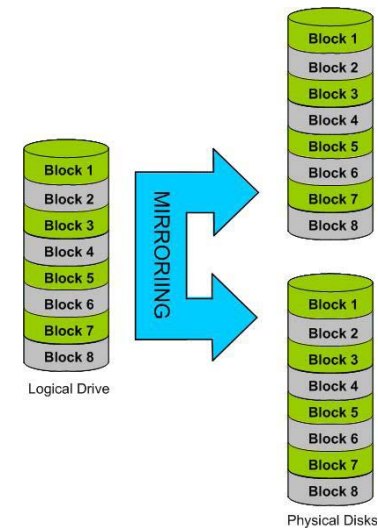
RAID 5:    RAID 5 provides data striping with distributed parity, which stores information that can be used to reconstruct data. A RAID 5 array will be the size of all the combined disks capacity less the capacity of one disk, e.g. If there are 4x 80GB disks in the array, the arrays capacity will be 240GB (3x80GB).
Implementing RAID 5 on the DNS-346 allows it to continue operating even if one of the disks fails.
The diagram below indicates the operation of RAID 5:
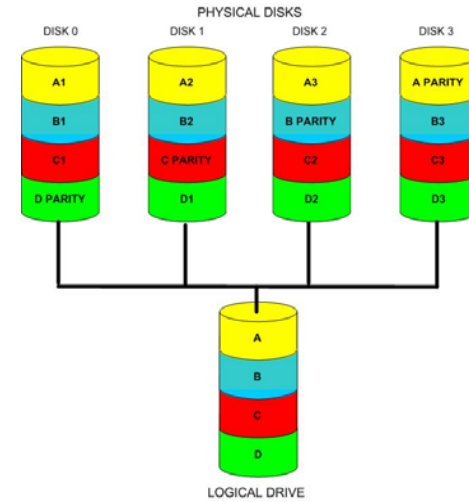
RAID 10:    RAID 10 combines the best features of RAID 0 and RAID 1 by implementing a stripe of mirrors. RAID 10 requires a minimum of four evenly sized disks.
The advantage of implementing RAID 10 is that it all but one of the disks in any of the RAID 1 mirrors can fail without any loss of data.
The diagram below indicates the operation of RAID 10:
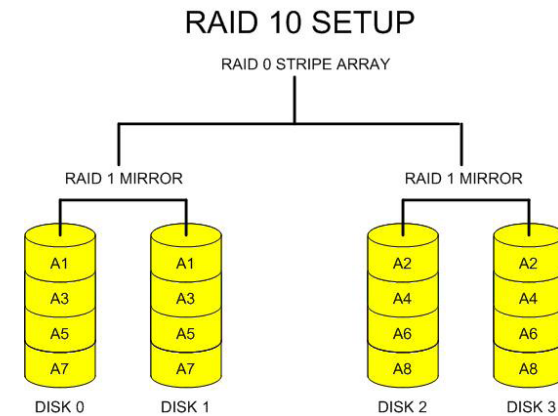
# Mapping a Drive

You can use the D-Link Easy Search Utility to map drives to your computer. Insert the DNS-346 CD into your CD-ROM drive.

1. Click Easy Search Utility. The Easy Search Utility will load and detect any DNS-346 devices that are on the local network. If the DNS-346 you are working with does not show up in the device list, click Refresh.

2. Highlight an available DNS-346. Available volumes will be displayed under Drive Mapping. Highlight the volume you want to map. Select an available drive letter from the drop-down menu and click Connect. Once connected, your mapped drive(s) will appear in My Computer.
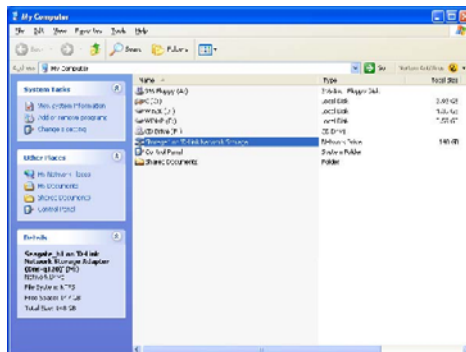
3. Double-click the My Computer icon on your desktop. Double-click on the mapped drive to access the files and folders.

# USB Print Server

The DNS-346 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-346. It is important to ensure that any of the printer manufacturer's drivers are already installed on any computer you want to print from.

Step 1: To add a printer:

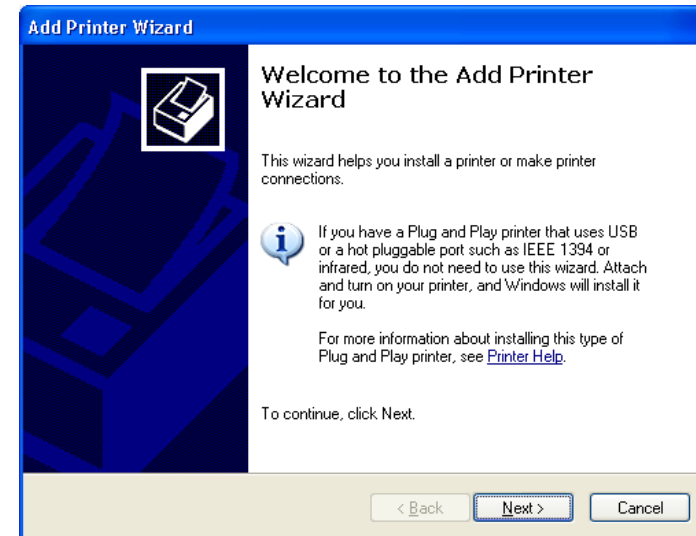Click **Start** and select **Printers and Faxes**.
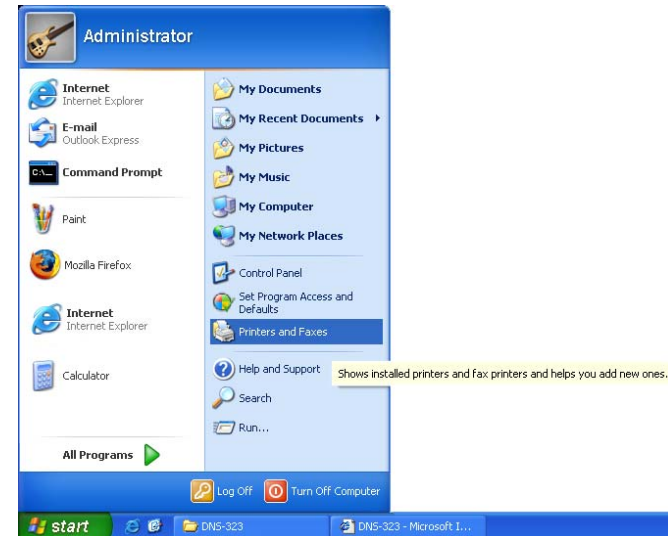
Step 2: Select "**Add a printer**".
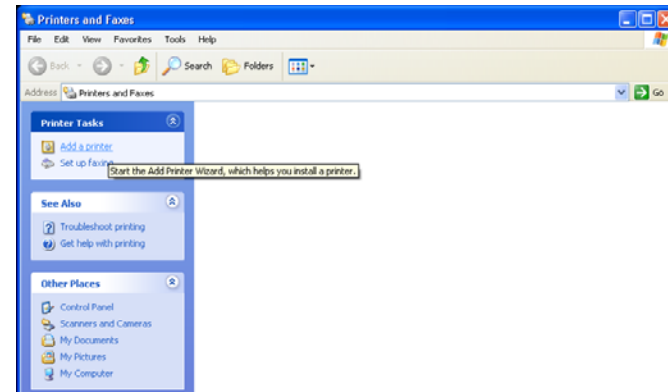
Step 3:  The Windows® Add Printer Wizard will launch:

Click on the **Next** button to accept these changes and continue.
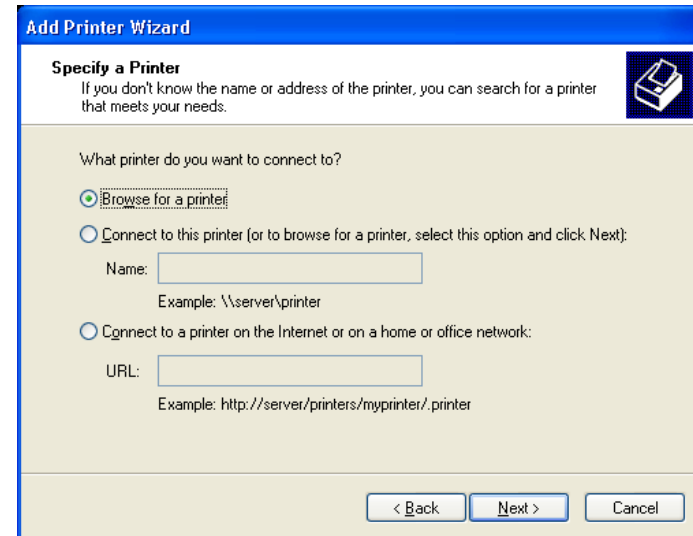Click on the **Cancel** button to discard these changes.

Step 4:  When prompted to choose a local, or network printer, select "**A network printer, or a printer attached to another computer**."

Click on the **Next** button to accept these changes and continue.
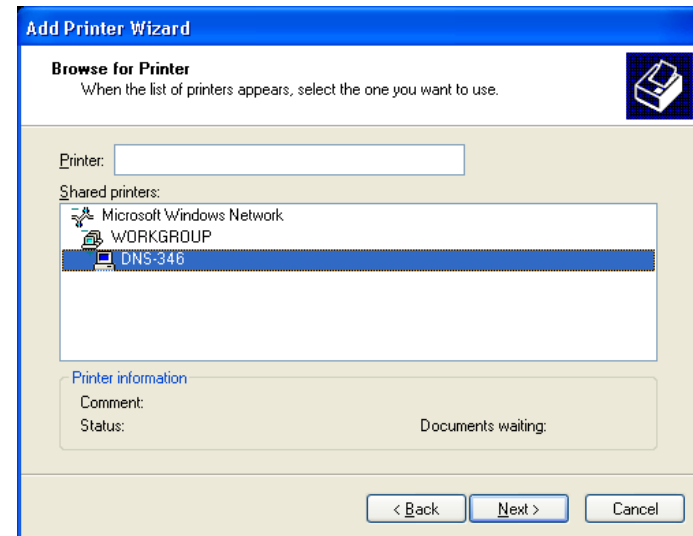Click on the **Cancel** button to discard these changes.
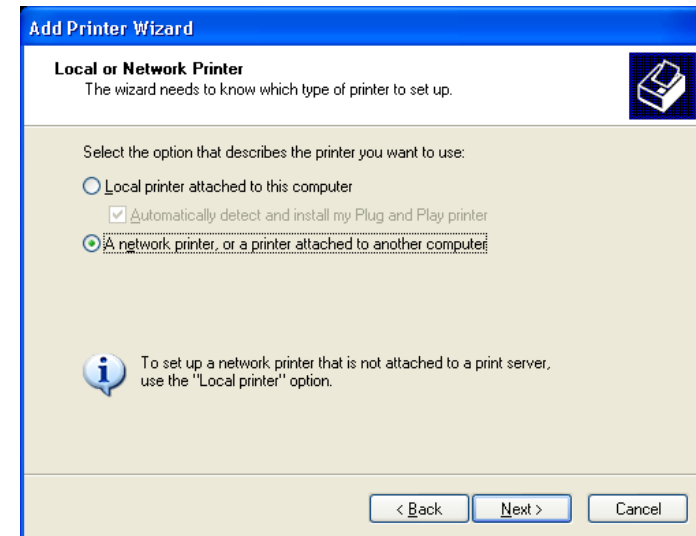
**Step 5:**   Select "**Browse for a printer**" option.

Click on the **Next** button to accept these changes and continue.
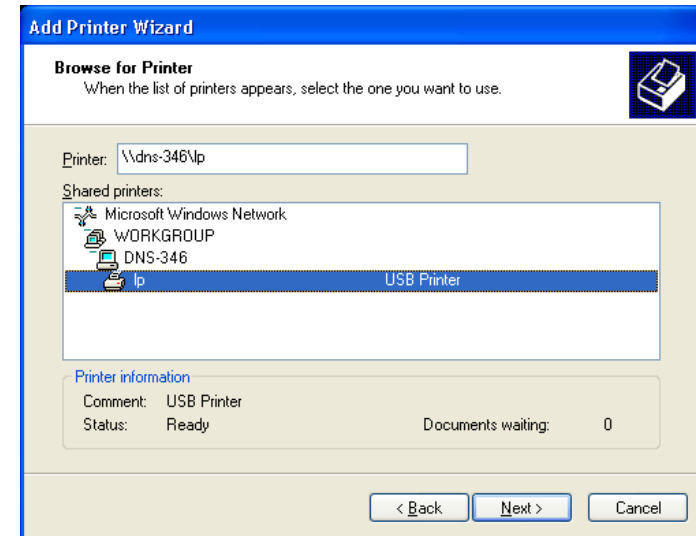Click on the **Cancel** button to discard these changes.

**Step 6:**   Select Double-click "**DNS-346**" from the Shared Printers list to expand the tree.
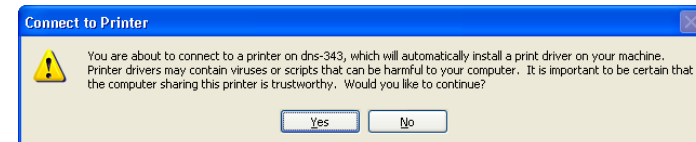
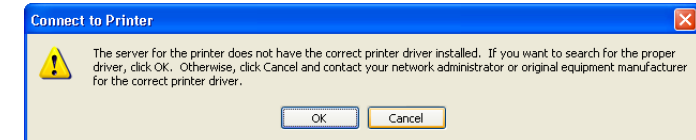**Step 7:** Select the available USB printer.

Click on the **Next** button to accept these changes and continue.
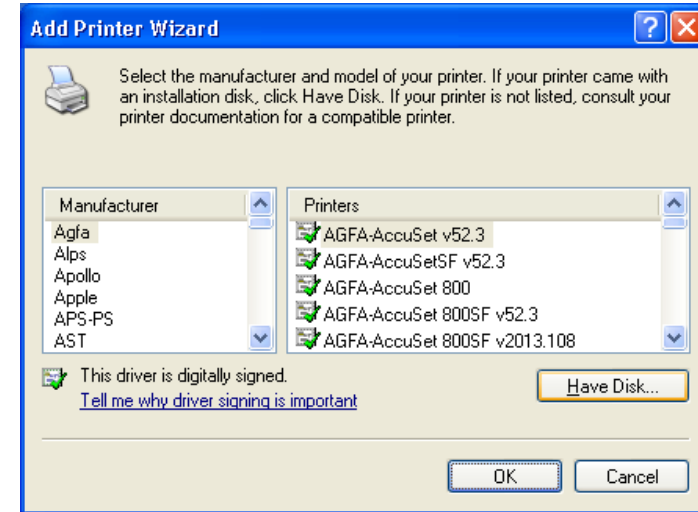Click on the **Cancel** button to discard these changes.

**Step 8:** The following printer driver messages will appear:
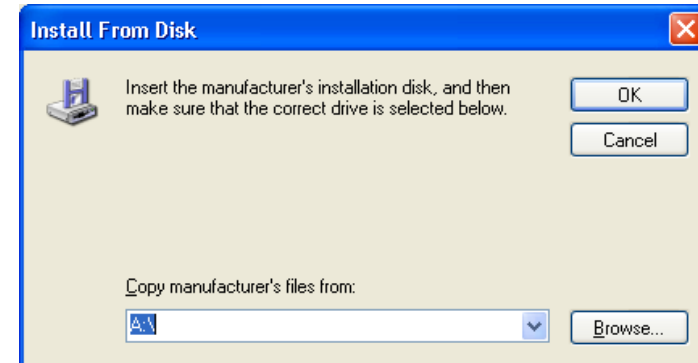Click **Yes** to continue.
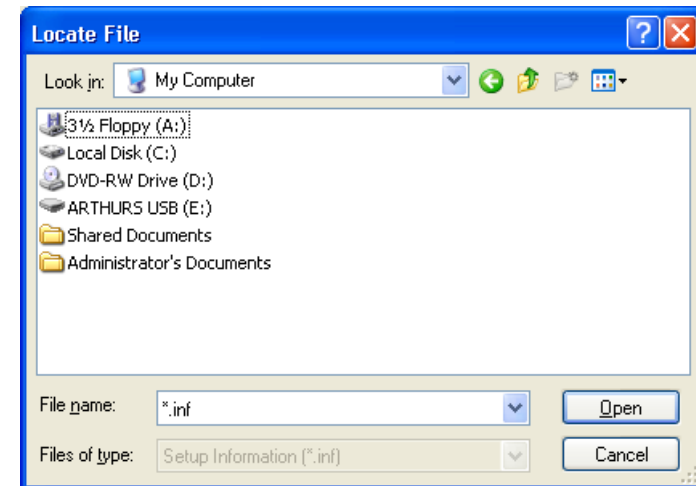
Click **OK** to continue and select a printer driver.

**Step 9:** 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**.
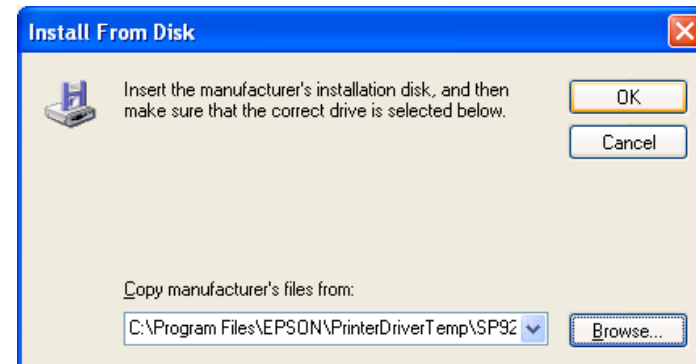
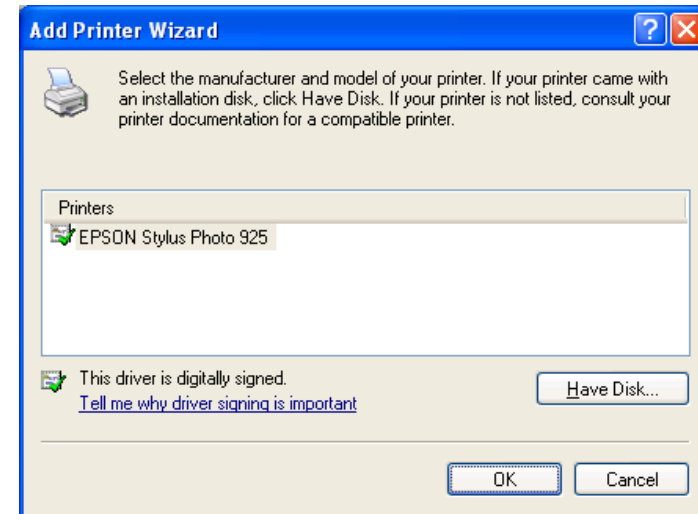**Step 10:** Insert the print driver CD or browse to the appropriate directory.

**Step 11:** Select the appropriate driver file, and click **Open** to continue.



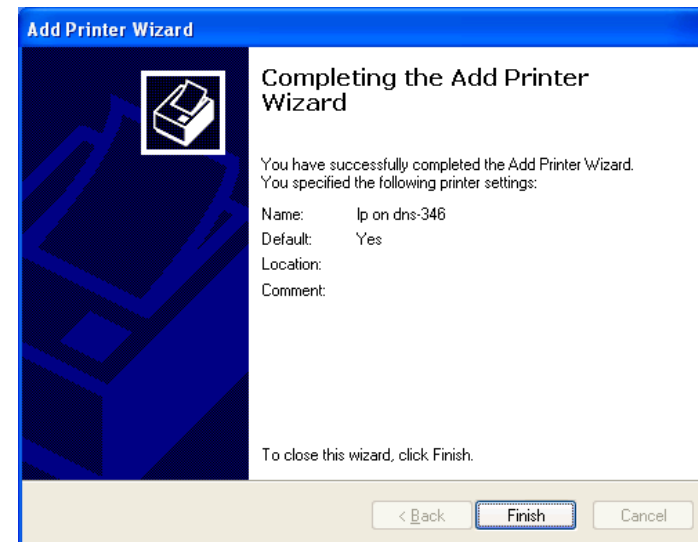**Step 12:** Click **OK** to continue.

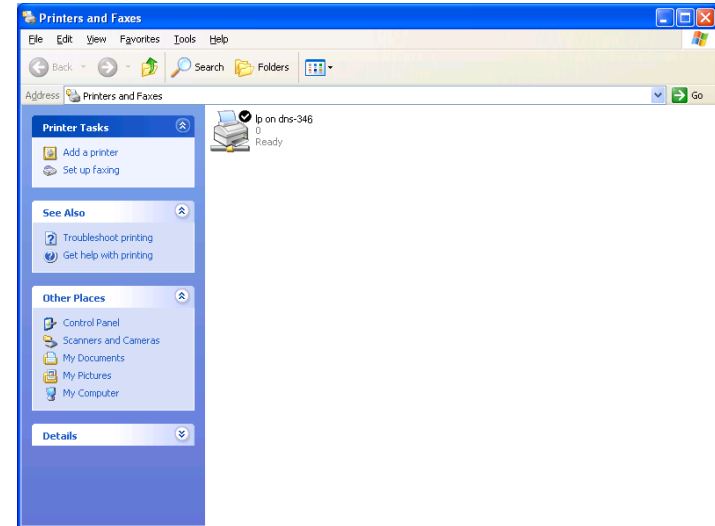Step 13:   Verify the driver is correct, and click **OK** to continue.

Step 14:   The wizard will install the printer drivers, and return a completion screen.

Click **Finish**.

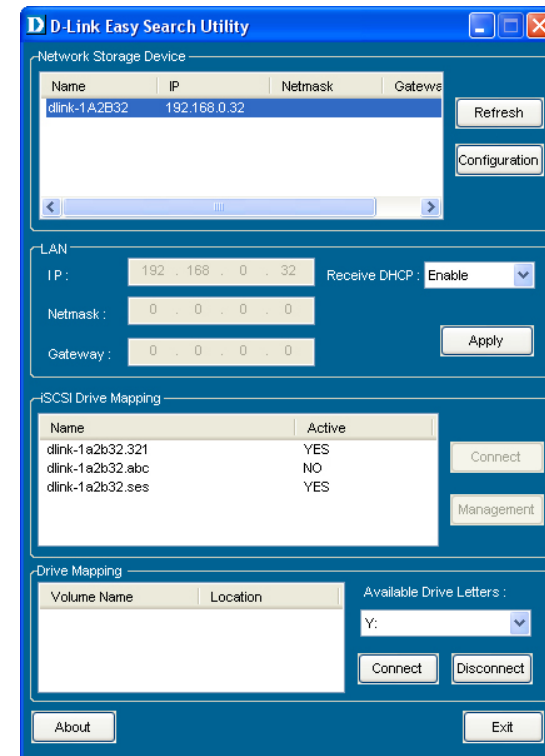**Step 15:** Verify the driver is correct, and click **OK** to continue.

# ISCSI Drive Mapping

The iSCSI Drive Mapping is used to manage the iSCSI settings on the DNS-346. Carry out the following to configure the iSCSI settings:

**Step 1:** Click the listed DNS-346.

The available iSCSI target names in the iSCSI Drive Mapping section appear.

---

| | |
|---|---|
| [icon] | **NOTE:** If you cannot see the latest list, click the **Refresh** button to update the status. |

| | |
|---|---|
| [icon] | **NOTE:** You will need to create iSCSI volume in the **Setup** -> **Disk Management** to see the iSCSI target name in this section. |

| | |
|---|---|
| **Name:** | Displays the names of the available iSCSI targets on the DNS-346. |
| **Active:** | Displays Yes if the target is active. Displays No if the target is not active. |
| **Connect/Disconnect:** | Choose a target from the list and click the **Connect/Disconnect** button to activate/deactivate the target. If CHAP authentication has been enabled, then a username and password will be required. Click the **Management** button to see the Management window. |
| **Management:** | The window allows you to add, delete, mount and unmount the partition. |

| | |
|---|---|
| **Configuring Targets:** | When attempting to connect a target for the first time, choose the target from the list.<br><br>Click the **Connect** button. |

If the CHAP is enabled, you will see this window appears requesting CHAP user and password.
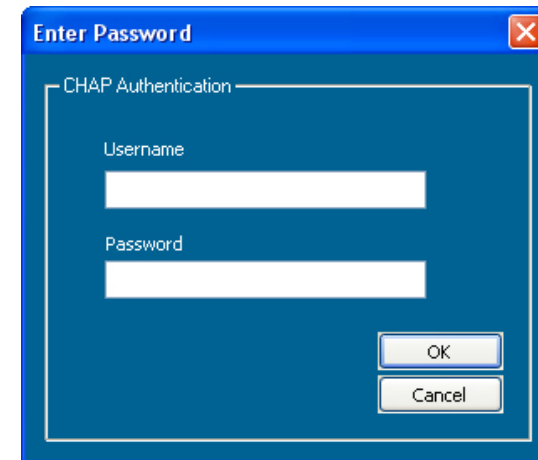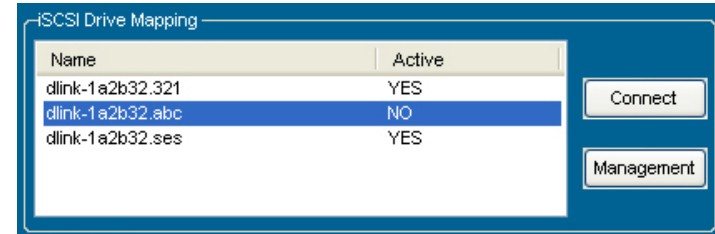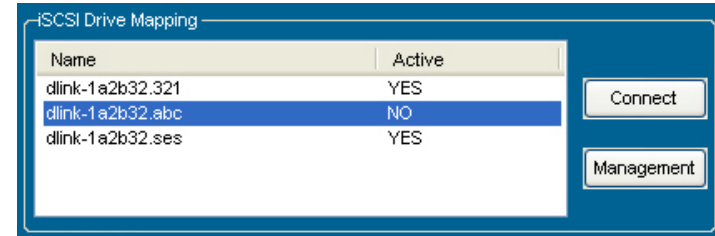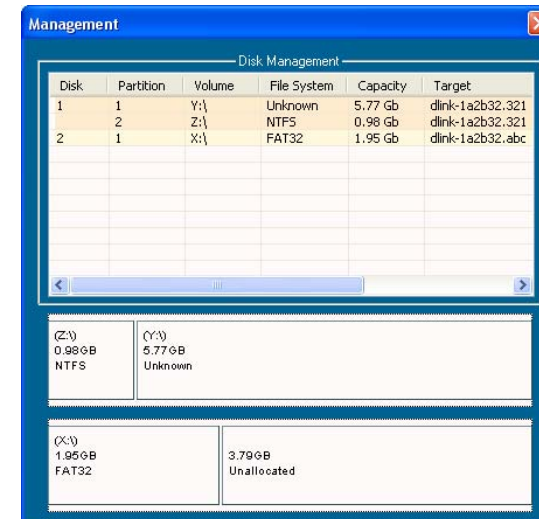
**Target:** Display the iSCSI target name you chose.

**Partition Size:** Tick the **Use Maximum Available Space** checkbox to specify that the maximum available space on the disk will be used to create the new partition. To specify a size un-tick the checkbox and type in the amount of size in megabytes in the Megabytes field.

**Format Type:** Choose whether to format the new partition with **NTFS** or **FAT32** by ticking the appropriate checkbox.

**Drive Letter:** Choose the drive letter that you want to allocate to the iSCSI partition from the drop-down menu.
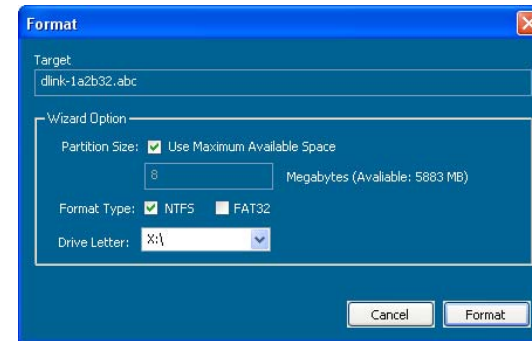
When you have finished configuring the Target Settings, click the **Format** button to see the window below.

**Configuring Disks:** This window appears after clicking the **Format** button. Or, select a target in the iSCSI Drive Mapping list and click the Management button to see the window.
The Management window allows you to manage partition on the disks installed in the DNS-346 and Unmount / Mount the disks installed in the DNS-346.
The Disk Management section displays the following parameters:

**Disk:** Displays the ID number of the disk installed in the DNS-346.

**Partition:** Displays the Partition number of the disks partition.

**Volume:** Displays the drive letter that the partition is mapped to on the client machine.

**File System:** Displays the File System that the partition was formatted with.

**Capacity:** Displays the total capacity of the partition.

**Target:** Displays the iSCSI target name of the partition.

**Adding:** Right-click an **Unallocated** partition and click **Add**.
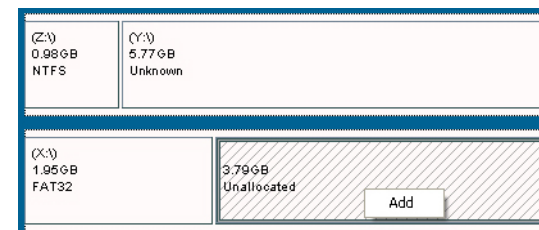
The Partition Manager window opens:
To add a partition, configure the parameters as explained below:

Partition Size:    Tick the **Use Maximum Available Space** checkbox to specify that the maximum available space on the disk will be used to create the new partition. To specify a size un-tick the checkbox and type in the amount of size in megabytes in the Megabytes field.

Format Type:       Choose whether to format the new partition with **NTFS** or **FAT32** by ticking the appropriate checkbox.

Drive Letter:      Choose the drive letter that you want to allocate to the iSCSI partition from the drop-down menu.
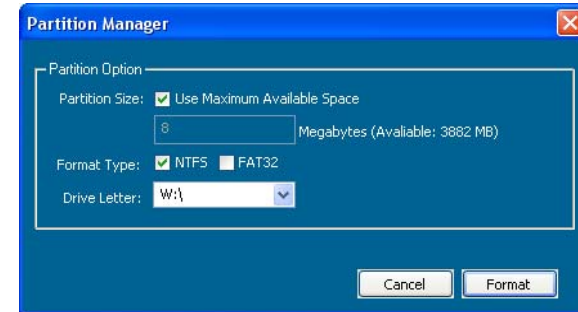
When you have finished configuring the partition settings, click the **Format** button to add the new partition.

Delete:            Right-click an existing partition and click **Delete**.
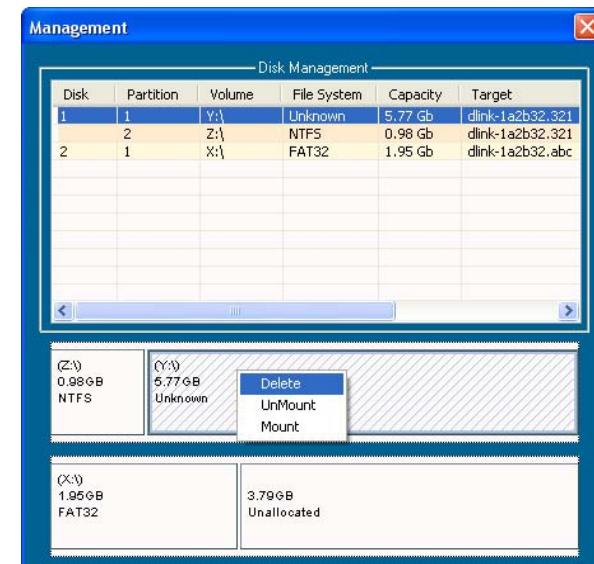
**Mounting Disks:** When a partition is not mounted, a **\*** (start) symbol will appear in the Volume column in the Disk Management list.
Carry out the following steps to mount a disk:

Right-click an unmounted partition and click **Mount.**
The Drive Select window appears.

Select the drive letter in the Device drop-down list.
Click the **OK** button.
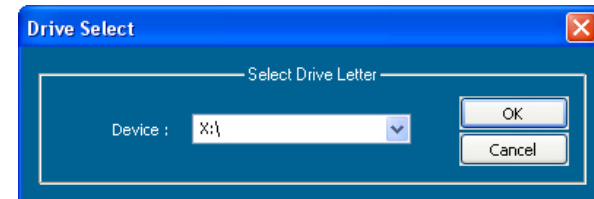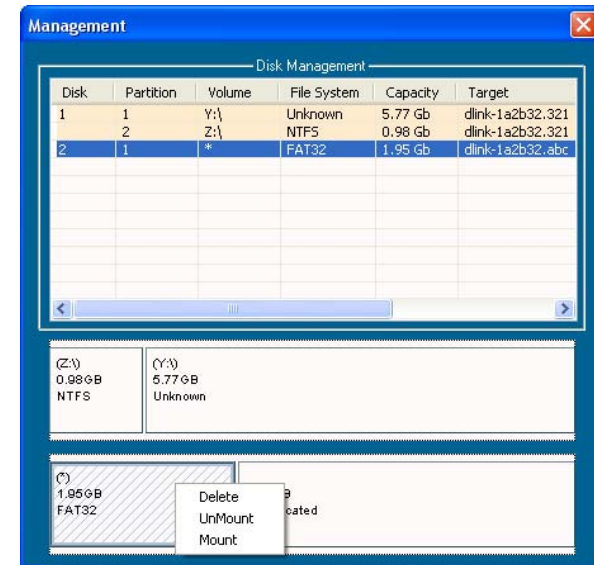
The mounted disk is displayed in the Disk Management list.
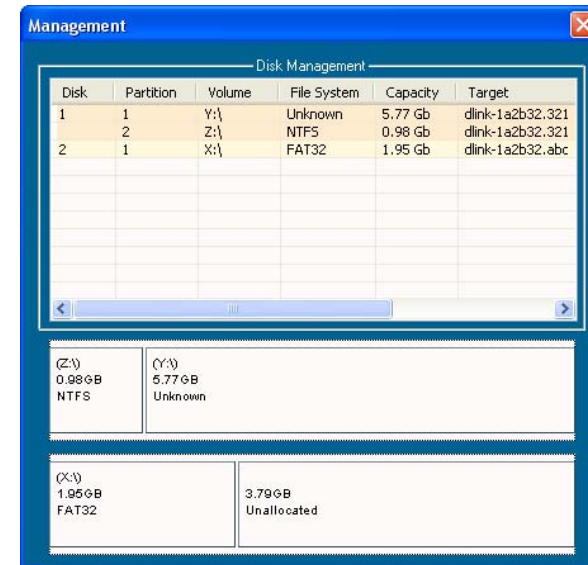


The newly mounted disk is displayed in the My Computer window and can be used as if it was a locally attached disk.

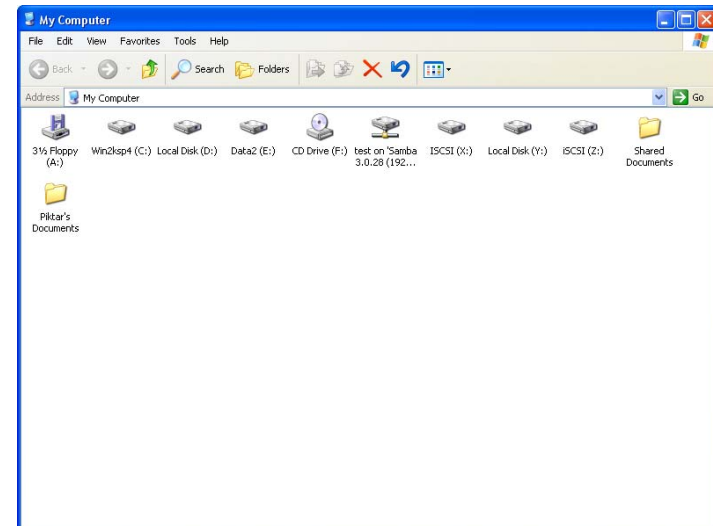# Hot-swap Function

The DNS-346 supports hot-swap drive trays. You can eject or insert 3.5" SATA hard drive(s) when the DNS-346 is operating.

However, if the hard drives are created into various levels of RAID, you cannot hot swap all the hard drives at the same time. Hot swapping all the hard drives will cause a loss of data, and the RAID volume will need to be re-created again. Different levels of RAID required various numbers of hard drives remaining in the DNS-346.

**Standalone/JBOD/RAID 0:**
> The data will be lost and the volume will crash, if any of the hard drives are hot swapped.

**RAID 1:**
> You can hot swap the hard drives as long as one of the hard drives in the mirror is still in the DNS-346. Removal of all hard drives will result in a loss of all data and volume will have crashed.

**RAID 5:**
> In a RAID 5 volume, it is only possible to hot swap 1 hard drive at a time without losing all data. This is because a RAID 5 volume can only tolerate the loss of 1 hard drive and still continue to work. After hot swapping a hard drive, the volume must first be rebuilt before another hard drive can be hot swapped, otherwise this will also result in a loss of all data and the RAID volume will have crashed.

**RAID 10:**
> RAID 10 is a stripe of mirrors. You cannot hot swap the paired hard drives at the same time. This means Hard Drive 1 and Hard Drive 2, or Hard Drive 3 and Hard Drive 4 cannot be hot swapped at the same time. Otherwise, you will lose all data and the RAID volume will have crashed.

You can check the RAID configuration from the Setup -> Disk Management page on the Web UI. When hot swapping hard drives, you will see the changes in the Disks column. Hot swap one of the hard drives, make sure the Disk number has disappeared from the Disks column, and then hot swap the next hard drive.

# Storing non-English Character Files

By default the DNS-346 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.