EtherFast® Network Attached Storage

with 80 GB Hard Drive + PrintServer

Use this guide to install: EFG80

User Guide

LINKSYS®

Table of Contents

Linksys highly recommends that you regularly back up the files that are on the Instant GigaDrive™ . Linksys is not responsible for any data loss, nor will Linksys perform any recovery on lost data or files.

Chapter 1: Introduction

The Linksys Instant GigaDrive™ Series EtherFast® Network Attached Storage

Insert 80 GB of storage space into your network with the Instant GigaDrive™ from Linksys. Compact and powerful, this Network-Attached Storage (NAS) device adds 80 GB of storage to your network without adding the cost, space, and maintenance hassles of a typical file server.

The Instant GigaDrive™ provides solid data transfer for multiple client connections. It is also equipped with a built-in Print Server for the quick and inexpensive addition of a network printer and an extra drive bay so you can add an additional drive as your network needs demand.

The Instant GigaDrive's 10/100 port will automatically adjust to your network's speed. Equipped with a self-repairing feature, the Instant Gigadrive's comprehensive, web-based configuration offers a wide array of management options. The Instant GigaDrive™ also functions as a stand-alone DHCP server for easy installation.

Features

- Built-in Print Server Allows Addition of a Network Printer
- Automatically Adjusts to 10Mbps or 100Mbps Ethernet Speeds
- Web-based Configuration Interface Accessible From Networked PCs
- Acts as a Stand-Alone DHCP Server for Your Network
- Setup Wizard Program Allows for Speedy Configuration
- Built-in 200MHz Processor
- Automatically Maintains Itself to Provide File System Integrity
- Designate Access to Shared Data By Groups or Individual Users
- Small, Compact Footprint Makes Portability Easy
- Adds 80 GB to Your Network with the Capabilities to Expand up to 240 GB

Package Contents

Figure 1-1

The following items, shown in Figure 1-1, should be included in the Instant GigaDrive's packaging.

- One Linksys Instant GigaDrive™
- One Power Cord
- One Category 5 Ethernet Network Cable
- One Setup Wizard CD-ROM
- One User Guide
- One Quick Installation and Registration Card

Minimum Requirements

- One Windows 98, Millennium, NT 4.0, 2000, or XP PC with TCP/IP protocol installed
- 10BaseT or 100BaseTX Ethernet network

> **Important**: Linksys highly recommends that you regularly back up the files that are on the Instant GigaDrive™ . Linksys is not responsible for any data loss, nor will Linksys perform any recovery on lost data or files.

Chapter 2: Getting to Know the Instant GigaDrive™

The Instant GigaDrive's Rear Panel

All of the Instant GigaDrive's connectors and switches are on the rear panel, as shown in Figure 2-1.

Figure 2-1

Power Switch   The **Power** switch is a spring-loaded soft switch that powers the Instant GigaDrive™ on and off. If the Instant GigaDrive™ is not powered on, pressing the **Power** switch will start the Instant GigaDrive's startup process. Pressing the **Power** switch while the Instant GigaDrive™ is turned on will begin its internal shutdown process. The Instant GigaDrive™ must be powered off this way, or through its internal shutdown process, which is located in the web-based utility.

AC Input Port   The **AC Input** port is where the power cord plugs in. Never remove the power cord while the Instant Gigadrive™ is turned on.

Printer Port   You can also add a printer to your network through the Instant GigaDrive's **Printer** port, using DB-25 printer cable.

Reset Button   If the Instant GigaDrive's IP Address or password is lost, press and hold this button down for three seconds, then release this button. The Instant GigaDrive™ will beep once to indicate that the default IP Address (192.168.1.77, with a Network Mask of 255.255.255.0) has been provided. This function will also clear the Instant GigaDrive's administrative passwords.

Uplink Button   This button toggles the Instant GigaDrive's Ethernet connector between an Uplink setting and a standard setting. If the Instant GigaDrive™ is connected directly to a PC without a hub, then this button should be pressed in. If you are connecting the Instant GigaDrive™ to a hub or switch, this button should not be pressed in. If it is, press it once to release it.

LAN Port   Use this port to connect the Instant GigaDrive™ to your 10BaseT or 100BaseTX hub.

100 LED   *Amber.* This LED will light up if the 10/100BaseTX connector is communicating at 100 mbps.

10 LED   *Green.* This LED will glow green if the 10/100BaseTX connector is communicating at 10 mbps.

The Instant GigaDrive's Front Panel

The Instant GigaDrive's front panel, shown in Figure 2-2, displays the following LEDs.

Drive LEDs   *Green.* The LED for each disk drive will flash when the drive is active. The LED is located next to the lock on each of the drive trays.

Ready   *Green.* If this light shines a steady green, then the Instant GigaDrive™ is working properly. It blinks during startup or shutdown, and turns off after the shutdown is completed. It will also blink during a firmware upgrade.

Error   *Amber.* If this light is flashing, then there is a hardware error. It will also flash during the power-on self test or a firmware upgrade. Once the self-test or upgrade is completed, it will turn off.

Figure 2-2

LAN	*Green.* This LED flashes when data is transmitted or received via the network.
Disk	*Green.* This LED flashes when the Instant GigaDrive's hard drive is being accessed. It stays on during the self-test.
Disk Full	*Green.* This LED lights up when the Instant Gigadrive™ has reached its maximum storage capacity.
Backup	*Green.* This LED flashes when the Instant Gigadrive's back-up utility is active.

Beeper Codes

The Instant GigaDrive™ has an internal beeper that beeps to indicate certain events.

1 Beep	This signals that the **Reset** button or **Power** switch has been pressed.
2 Beeps	Repeated every five seconds for one minute, this signals that the Instant GigaDrive™ is configured as a DHCP client, but no DHCP server responded to the DHCP client's request.
3 Beeps	Repeated every 15 seconds for three minutes, this signals that the Instant GigaDrive's hard disk usage exceeds 98% capacity.
5 Beeps	Repeated every 15 seconds for three minutes, this signals that the Instant GigaDrive™ is overheating. An automatic shutdown will be performed three minutes after the first beep.

Chapter 3: Installing the Instant GigaDrive™

Overview

This chapter instructs you on how to physically connect the Instant GigaDrive™ to your network. This chapter also covers the hook-up of a printer to the Instant GigaDrive's print server port. (The Instant GigaDrive™ will perform equally well as a storage device with or without an attached printer.) If you aren't interested in taking advantage of the Instant GigaDrive's print server function, skip any steps that deal with printer installation. The Instant GigaDrive's installation process will work fine without them.

Note: Make sure the TCP/IP protocol has been configured on your network PCs before installing the Instant GigaDrive™.

Step-by-Step Installation

1. Determine if the Instant GigaDrive™ will be installed onto a network or directly to a PC. If connecting the Instant GigaDrive™ to a network device, the Uplink button located on the Instant GigaDrive's rear panel should not be pressed. If connecting directly to a PC, the Uplink button should be pressed in. If it is not, press it in now.

2. Connect the network cable that came with the Instant GigaDrive™ to the LAN port. Connect the other end of the cable to your hub, switch, or PC.

3. Connect a printer to the Instant GigaDrive™. Connect a standard printer cable to the Instant GigaDrive's rear-panel printer port. Connect the other end of the cable to your printer. (For further information on connecting a printer, refer to Appendix C: Setting Up the Built-In PrintServer.)

4. Connect the power supply. Plug the supplied power cord into the Instant GigaDrive's Power port, which is located on the rear panel. Connect the power cord to a power outlet.

5. Locate the Instant GigaDrive's power switch on the rear panel. Press it once to power on the Instant GigaDrive™. Then, power on the network printer, if you attached one to the Instant Gigadrive™.

6. Now that its power is on, the Instant GigaDrive's boot process will begin. The Instant GigaDrive™ will run a brief self-test (two or three seconds) prior to actually booting up. During the self-test, most of the Instant GigaDrive's LEDs will be lit or flashing. The entire boot process should take only a few minutes.

7. When most of the LEDs turn off, leaving only the Ready LED lit up (and not blinking), the Instant GigaDrive's boot up is complete. If the Error LED is flashing, or if the Instant GigaDrive™ repeatedly beeps, there is a hardware problem. Review the Beeper Codes section in Chapter Two for information about what the Beeper Codes mean.

Chapter 4: Using the Instant GigaDrive's Setup Wizard

Now that everything is connected and powered on, you are ready to configure the Instant GigaDrive™ so that it is accessible to the users on your network. You will have to run the Instant GigaDrive's Setup Wizard on your PC to access the Instant GigaDrive's Quick Setup feature. To run the Setup Wizard on your Windows 98, Me, NT 4.0, 2000, or XP PC, follow the instructions below.

1. Insert the Setup Wizard CD-ROM into your PC's CD-ROM drive.

2. An autorun menu should appear a few seconds after you insert the CD into your CD-ROM drive. If the autorun menu does not appear after a minute, click the **Start** button, select **Run**, type **D:\SetupUtility.exe** (where D is the letter of your CD-ROM drive) into the *Open* window and press **Enter**. The autorun menu appears as shown in Figure 4-1.

Figure 4-1

This *Welcome* screen provides you with four options in the buttons along the right side of the screen. The first button is the **Setup** button. Click this button to continue with the setup procedure. The second button is the **User Guide** button. The third button, **Linksys Web**, connects you to the Linksys web site if you have an active Internet connection. Lastly, clicking the **Exit** button will exit the Setup Wizard.

The remainder of this chapter addresses the setup procedure you would follow by clicking the **Setup** button.

3. From the following screen, shown in Figure 4-2, the Setup Wizard will automatically search for any Instant GigaDrive™ currently on your network or attached to your PC. If it fails to detect the Instant GigaDrive™ or if an Instant GigaDrive™ has been installed since the Setup Wizard's last search, click **Search Again** to locate the Instant GigaDrive™.

Figure 4-2

When an Instant GigaDrive™ has been found by the Setup Wizard, you can create a shortcut on your desktop for quicker access to that Instant GigaDrive™. The shortcut appears as shown in Figure 4-3.

Figure 4-3

From the screen shown in Figure 4-2, once you have found the Instant GigaDrive™ you wish to set up, highlight and click it. Then, click the **Yes** button on the right to change any of the Instant GigaDrive's settings (as shown in Figure 4-4) or the **No** button to accept the settings and exit the Setup Wizard.

Figure 4-4

4. The first settings that you can change are the Instant GigaDrive's IP Address settings. As shown in Figure 4-5, select the radio button beside either **Fixed IP Address** or **Dynamic IP Address**.
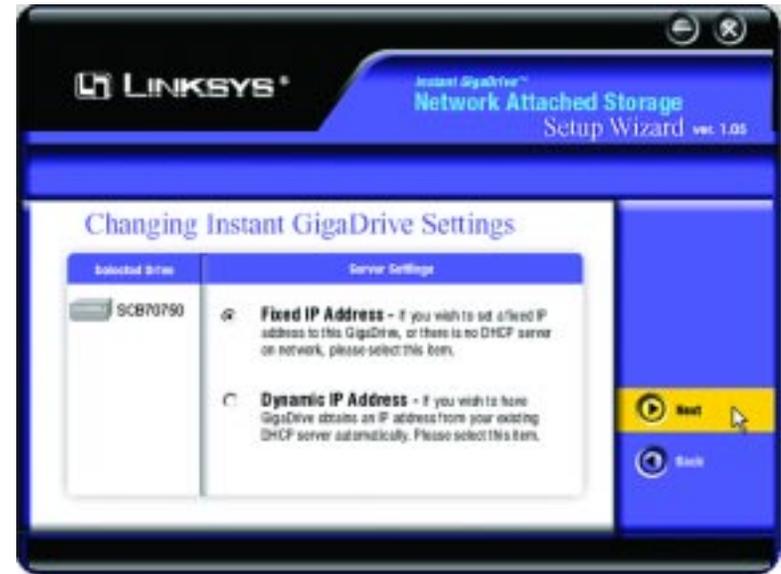
Figure 4-5

The **Fixed IP Address** is set by default (192.168.1.77). Use this setting if there is no DHCP server on your network and you want the Instant GigaDrive™ to use a static IP Address. With the Fixed IP Address setting, you can also use the Instant GigaDrive™ as your network's DHCP server. Use the **Dynamic IP Address** setting if you already have a DHCP server setting IP Addresses on your network devices.

Click the radio button next to your selection. Then, click the **Next** button on the right to proceed or the **Back** button to return to the previous screen.

Proceed to the next step if you are selecting the Fixed IP Address setting. If selecting Dynamic IP Address, proceed to Step 7.

5. If you chose Fixed IP Address in the previous step and clicked the Next button, you will see the screen shown in Figure 4-6. On this screen, you will set the Instant GigaDrive's IP Address and network information. Enter the following information and click the **Next** button on the right to proceed or the **Back** button to return to the previous screen.

Server Name. The Server Name is how the Instant GigaDrive™ will be identified on your network. This name can be up to 12 alphanumeric digits long

Figure 4-6

IP Address. Set the Instant GigaDrive's IP Address here, making sure that it is on the same LAN segment as the PC running the Setup Wizard.

Subnet Mask. The Subnet Mask must match the other devices on your network. It is set by default to 255.255.255.0.

Default Gateway. The value is left blank by default. If you have a router on your network, however, enter its IP Address here.

6. From the next screen, shown in Figure 4-7, you can set the Instant GigaDrive™ as your network's DHCP server if no other device is functioning as a DHCP server on your network. If you wish to use the Instant GigaDrive™ as a DHCP server, click the box next to **Enable DHCP Server**. Then, enter the range of IP Addresses you want to assign on your network. The first three **Start** and **Finish** fields must match the Instant GigaDrive's IP Address with the final fields ranging from 2 to 250.

   Click the **Next** button on the right to proceed or the **Back** button to return to the previous screen.

Figure 4-7

7. From the next screen, Figure 4-8, you can change the time and date on the Instant GigaDrive™.

Figure 4-8

Local Time. Set your current time here.

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

Local Date. Set your current date here.

Click the **Next** button on the right to proceed or the **Back** button to return to the previous screen.

8. On the next screen, shown in Figure 4-9, review the Instant GigaDrive's settings. If they are correct, click the **Save** button on the right. If you would like to change them, click the **Back** button to return to a previous screen.

Figure 4-9

9. A screen will appear, shown in Figure 4-10, cautioning you that changes to the Instant GigaDrive's settings are being made. To save these changes, click the **OK** button or click the **Cancel** button to return to the previous screen.
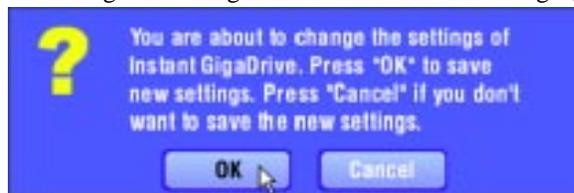
Figure 4-10

10. You have now successfully set up the Instant GigaDrive™ with the Setup Wizard. When the screen shown in Figure 4-11 appears, click the **Exit** button to exit the Setup Wizard.
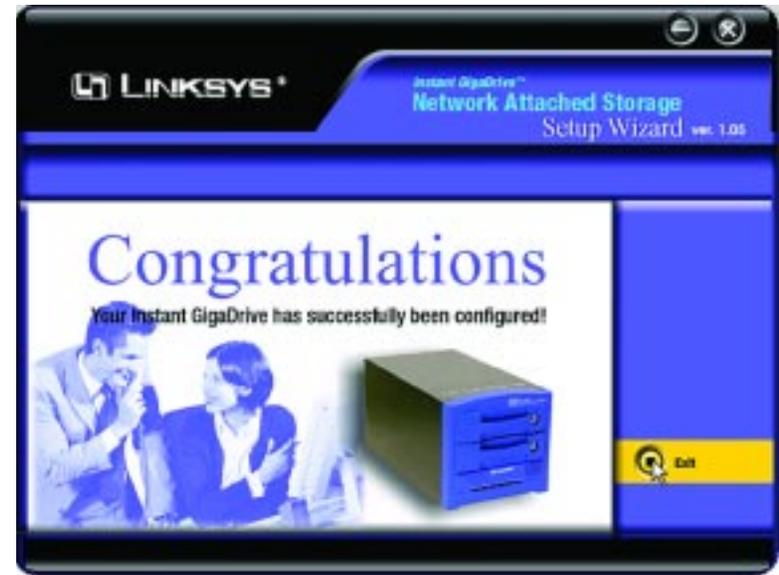
Figure 4-11

Chapter 5: Using the Instant GigaDrive's Web-Based Utility

For your convenience, an administrative utility has been programmed into the Instant GigaDrive™. This chapter will explain all of the functions in this utility. All administrative tasks are performed through this web utility. The web utility can be accessed by any PC on the network by entering **http://192.168.1.77** in the PC's web browser address window, as shown in Figure 5-1.
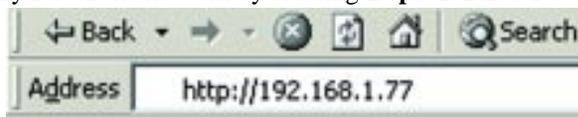
Figure 5-1

After you press the Enter key, the Web Management Home Page will appear, shown in Figure 5-2. From this page, you can set a password, administer the Instant GigaDrive™, view this user guide, and even go to the Linksys web site.

Click the disk's links to access their contents. If you click the link to User Log in, you will be required to enter your User Name and Password.

Figure 5-2

Home Tab - User Log In
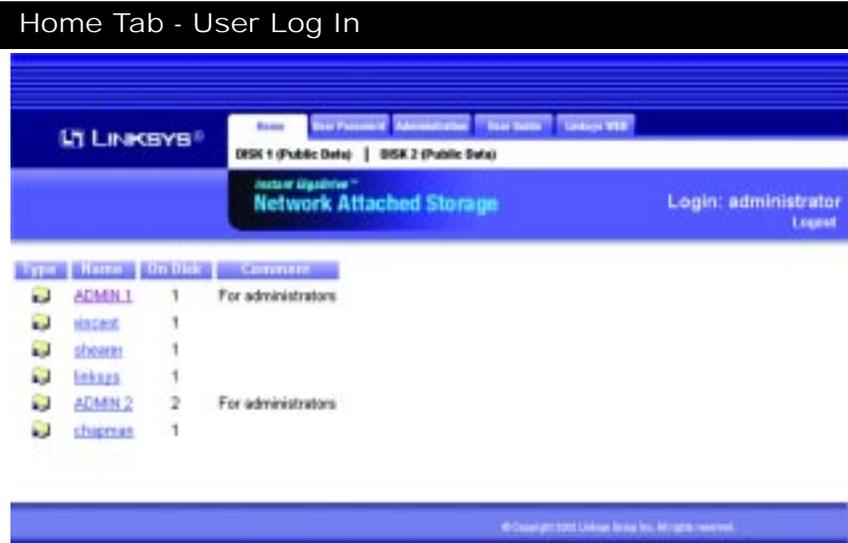
Figure 5-3

Clicking on **User Log in (Private Data)** will present the screen from which you will access your shares (shown in Figure 5-3).

Home Tab - Disk 1/Disk 2

Clicking on **Disk 1 (Public Data)/Disk 2 (Public Data)** will present the data that is available to everyone, as shown in Figure 5-4.

Figure 5-4

User Password Tab

Figure 5-5

From the User Password tab, shown in Figure 5-5, any user can change their password for interacting with the Instant GigaDrive's web-based utility. To do this, enter your **User Name** in the *User Name* field. This should be the same as your network logon. Then, enter the **password** you use when accessing the Instant GigaDrive's web-based utility. Next, enter a **new password**. This new password can be up to 15 hexadecimal characters long. Enter this new password again in the **Confirm New Password** field and click the **Save** button to save this new password.

To cancel this procedure and clear all the fields, click the **Cancel** button. For further information about anything on this screen, click the **Help** button.

Administration Tab - LAN

When you click the Administration tab, a password request window will appear, as shown in Figure 5-6. (Windows XP users will see a *Connect to* window.) Enter the **User Name** and **Password** you use to access the Instant GigaDrive™ and click the **OK** button.

If you have not already assigned an administrative user name and password for the Adminstrator, you can enter the default user name of Administrator. There is no password by default. Then, you can set the Administrator's user name and password from the **Administrator** tab, under Users. To cancel the login procedure, click the **Cancel** button.

Figure 5-6

After logging in, you will see the Administration tab's *LAN* screen, shown in Figure 5-7. This is the default screen that appears whenever you log in to the Administration tab.

Figure 5-7

From the *LAN* screen, you will be able to configure some of the settings you saved from the Setup Wizard. While these changes are being made, you can click the **Save** button to save these changes, **Cancel** to clear all changes, or **Help** to get further information about anything on this screen.

IP Address These fields allow you to Obtain an IP Address Automatically or use a Fixed IP Address. **Obtain an IP Address Automatically** is the same as using the Dynamic IP Address setting in the Setup Wizard and should be used if you already have a DHCP server, setting IP Addresses on your network devices. The **Fixed IP Address** selection is set by default. Use this setting if there is no DHCP server on your network and you wish the Instant GigaDrive™ to use one, static IP Address. With the Fixed IP Address setting, you can also use the Instant GigaDrive™ as your network's DHCP server.

When using the Fixed IP Address setting, you must enter the IP Address, Network Mask (the same as the Subnet Mask), and Default Gateway. The **IP Address** setting should contain an unused IP Address that contains the same LAN segment as the network on which the Instant GigaDrive™ is running. The **Network Mask** setting must match the other devices on your network. It is set, by default, to 255.255.255.0. If you have a router on your network, enter its IP Address in the **Default Gateway** field.

DHCP Server The Instant GigaDrive™ can serve as your network's DHCP server if no other device is functioning as a DHCP server on your network. If you wish to use the Instant GigaDrive™ as a DHCP server, click the box next to **Enable DHCP Server function**. Then, enter the range of IP Addresses you wish to assign on your network. The first three **Start** and **Finish** fields must match the Instant GigaDrive's IP Address, with the final fields ranging from 2-254.

DNS Server The DNS Server function translates Internet addresses to IP Addresses. Enter the same IP Addresses as set on your network, or recommended by your ISP. You must complete at least one DNS Server entry if using the "E-Mail Alerts" feature. Otherwise, the DNS entries may be left blank. When you complete multiple fields, the first available server will be used.

Administration Tab - System

Figure 5-8

From the *System* screen, shown in Figure 5-8, you will be able to change some of the Instant GigaDrive's basic settings as well as some of the more advanced settings. These settings, broken up into four categories, are explained on the following pages in detail. While these changes are being made, you can click the **Save** button to save these changes, or **Cancel** to clear all changes. To reset the Instant GigaDrive's default settings, click the **Restore Default Config** button. To get further information about anything on this screen, click the **Help** button.

IDENTIFICATION

GigaDrive Name   The GigaDrive Name is how the GigaDrive is represented on your network. When you look at the devices on your network, you will see the GigaDrive listed under this name.

Comment   The Comment field is optional, but it is a good place to list additional information about the GigaDrive, such as its location on the network, what department it belongs to in your organization, its default IP Address, etc.

WorkGroup   The WorkGroup name specifies under which workgroup the GigaDrive is listed.

Printer Name   Once you have a printer connected to the GigaDrive, enter the Printer's name, how it is identified on your network, in this field.

LOCATION

Language Support   Keep this set to the default setting (USA).

Time Zone   Set this according to the time zone in which you're located.

Local Date   Set the correct date here.

Local Time   Set the correct time here.

WINS

Enable   When using a Windows NT or 2000 network server, you can enable this function to find network devices by name over your server. This is more convenient than having to enter the device's IP Address.

WINS Server   Enter the IP Address of your WINS network server here.

OPTIONS

Convert Failed Logins   With this enabled, the GigaDrive will automatically take any failed logins (user name and password) as guest logins, providing access only to public areas on the drives.

Enable FTP Server   With this enabled, third party FTP software can be utilized to access the GigaDrive.

Allow Anonymous Login   With this enabled, users will be able to log in through the FTP server just as a user would log directly into the Instant GigaDrive™. Disabled, FTP users will not have read/write access to public folders.

Enable UPnP Support   PCs that allow Universal Plug and Play (Windows 2000 and XP) will have additional functionality with this enabled.

Port Number for HTTP   Entering another port number here allows for an alternate method of accessing the GigaDrive.

Administration Tab - Users

Figure 5-9

The *Users* screen, shown in Figure 5-9, allows you to manage the users that are on the Instant GigaDrive™. Users can be members of many user groups.

Existing Users   The user list shows all existing users. The details of the selected user are displayed in the "Properties" area.

• Click the **Groups** button to view and/or modify the Group that the selected user is in. (See Figure 5-10.) Select the user in the left-hand list that you want to give access to the group in the right-hand list. Click the right-pointing arrows and then the items will appear in the right-hand list. Click the **Close** button when finished. Click the **Help** button for more information.

• Click the **Delete** button to delete the selected user. When deleting a user, you have the option of deleting the Group and Share with the same name as the user (if they exist).

Figure 5-10

Properties   Enter the user's name in the **Name** field. Punctuation and other special characters (e.g. * / | \ ) cannot be used in the name. In the optional **Comment** field, you can enter a comment if you wish. In the **Password** and **Verify Password** fields, enter the user's password. These fields are also used to change an existing user's password, as follows:

Select the desired user. Clear the existing values in the password fields. Enter the desired password in both the **Password** and **Verify Password** fields. If no password is required, leave both fields blank. Click the **Update** button. When creating a new user, enter the desired password in both of these fields. Check the **Create matching Group and Share Folder (Private Folder)** to create a Group and a Share with the same name as the user when creating a new user. This field allows you to choose which disk is used for the Share. Read/Write access will be granted to the Share. The *Users* screen on the

Setup menu ALWAYS performs these functions. Check the **Enable Disk Quota of** box if you want to set the disk usage limit for the user. Enter the maximum amount of disk space the user is allowed to use. Click the **Clear Form** button to clear the form for the entry of a new user. Click **Save as new User** to create a new user, after entering their data in the *Properties* fields. Click the **Save** button to save any changes you have made to the properties for an existing user. To modify the properties for an existing user, select the desired user from the list. Their details will be displayed in the Properties fields. Edit the fields as required. Note that you cannot change the Create matching Group and Share Folder option when modifying a user. However, you can use the *Share (Private Folder) Location* field to change the location of a user's Private Folder, if it already exists. Click the **Save** button to save your changes.

Administration Tab - Status Information

Figure 5-11

The *Status Information* screen, shown in Figure 5-11, allows you to check the details and status of the Instant GigaDrive™.

System   GigaDrive Name - The current name. This name will be shown in "Network Neighborhood" or "My Network Places".
IP Address - IP Address currently used by the Instant GigaDrive™.
Current Status - Indicates the current status of the Server. This will usually state "Ready". If the Server is not available, the message will say why the Server is not available (e.g., Scandisk in Progress.)

• Click the **Shutdown Now** button to shut down the server immediately. This will break all existing connections, including this one. Clicking this button does NOT save any data you have entered.

• Click the **Restart Now** button to restart (reboot) the server. This will break all existing connections, including this one. The Instant GigaDrive™ will immediately restart, but it could take a few minutes before it is available again. Clicking this button does NOT save any data you have entered.

• Click the **View Log** button to view the log file in a separate window. (See Figure 5-12.) The log file is a record of activity on the Instant GigaDrive™, which can help in management and troubleshooting. Click the **Refresh** button to refresh the screen. Click the **Clear Log** button to clear all the data from the log.

Figure 5-12

Printer	Current Status - Possible states are On-line, Off-line, and Out of Paper.
	No of Print Jobs - The total number of print jobs in the Print Queue waiting to be printed.
Disk	Disk Type - Disk type, as provided by the manufacturer.
	Free Space - The amount of disk space still available to users.

E-Mail Alerts Check the **Send** button to enable the sending of E-Mail alerts by the Instant GigaDrive™. Alerts will be sent when there is some problem requiring the Administrator's attention. In the *E-Mail Address* field, enter the E-Mail Addresses. The messages generated by the Instant GigaDrive™ will be sent to this destination.

In the *Subject* field, you can enter the text you wish to appear in the "Subject" field of E-Mail generated by E-mail alerts.

Click the **Restart Now** button to restart (reboot) the Server. This will break all existing connections, including this one. The Instant GigaDrive™ will immediately restart, but it could take a few minutes before it is available again. Clicking this button does NOT save any data you have entered. Click the **View Log** button to view the log file in separate window. The log file is a record of activity on the Instant GigaDrive™, which can help in management and troubleshooting.

Click the **Save** button to save any changes. Click the **Cancel** button to clear anything that you entered. Click the **Refresh** button to update the data shown on the screen. Click the **Details** button to open a new window, displaying further status details, including a list of all PCs and other devices that have been allocated an IP address by the DHCP Server function (if enabled). Click the **Help** button to get more information.

Administration Tab - Group

Figure 5-13

The *Groups Information* screen (Figure 5-13) allows you to manage the User Groups that exist on the Instant GigaDrive™.

New Group   Use this area to create a new group. Enter the desired name for the new Group in the *Name* field, then click the **Create** button.

Existing Groups   This shows the list of all Groups. Two groups, "everyone" and "administrators", always exist and cannot be deleted.

Click the **Access** button to display the shares that the members of the current Group are able to access. You can then assign, remove or modify the access rights for this group. Click the **Members** button to display the users who are members of the selected Group. You can then add or delete members. The "everyone" Group ALWAYS contains all users. You cannot add or remove members. Click the **Delete** Button to delete the selected Group. The "administrators" and "everyone" Groups cannot be deleted. Click the **Help** button to get more information.

Administration Tab - Shares

Figure 5-14

The *Shares Information* screen, shown in Figure 5-14, allows you to create and manage shares.

Existing Shares   Click the **Access** button to view and configure the users who are allowed to access the selected share. Click the **Browse** button to view the contents of the selected share. Click the **Delete** button to delete the share.

Properties   Fill in the *Name*, *Comment*, *Location* and *Specify* fields to add a new share. Click the **Save as New Share** button to save your new share. Click the **Clear Form** button to clear the fields in Properties.

Click the **Save** button to save any changes you have made to Properties. Click the **Help** button to get more information.

Administration Tab - Backup

Figure 5-15

As shown in Figure 5-15, the *Backup Settings* screen allows you to back up the Instant Gigadrive's configuration file to your PC. You can also back up data from one disk to another.

Data Backup   This is used to back up data from one disk to another. Select **Enable data backup from Disk 1 to Disk 2**, then click **Start Backup Now** if you want to start the process immediately. Select **Enable data backup from Disk 1 to Disk 2**. Under the *Backup Time* pull-down menus, select the time and frequency for your backup.

Config Backup   Click the **Download** button to back up the configuration file to a file. Click the **Upload** button to upload the configuration file to the Instant GigaDrive™.

Click the **Save** button to save any changes you have made. Click the **Cancel** button to clear all changes. Click the **Help** button to get more information.

Administration Tab - Disk

Figure 5-16

The *Disk Settings* screen, shown in Figure 5-16, allows you to perform disk maintenance.

Format Disk If you have installed a new hard drive in the Instant GigaDrive's expansion slot, you will need to format the hard drive with the new format utility. Click the **Format Disk** button to format the appropriate hard drive.

Self-Test This test tells you the condition of the hard drive. Your hard drive must support S.M.A.R.T. to run the test. Click the **Test Now** button if you want to run the test immediately. Uner the **Run Test:** drop-down menus, select the time and frequency that you want to run the test.

Scandisk This checks your hard drive for directory structure, available space, and overall condition of files.

Defrag This checks your hard drive for fragmented files. Run this test to defragment your hard drive.

Standby Select the amount of time that you want your hard drive to wait before going into standby mode.

Click the **Save** button to save any changes you have made. Click the **Cancel** button to clear all changes. Click the **Disk Log** button to see the log of your disk settings. Click the **Help** button to get more information.

Administration Tab - Upgrade
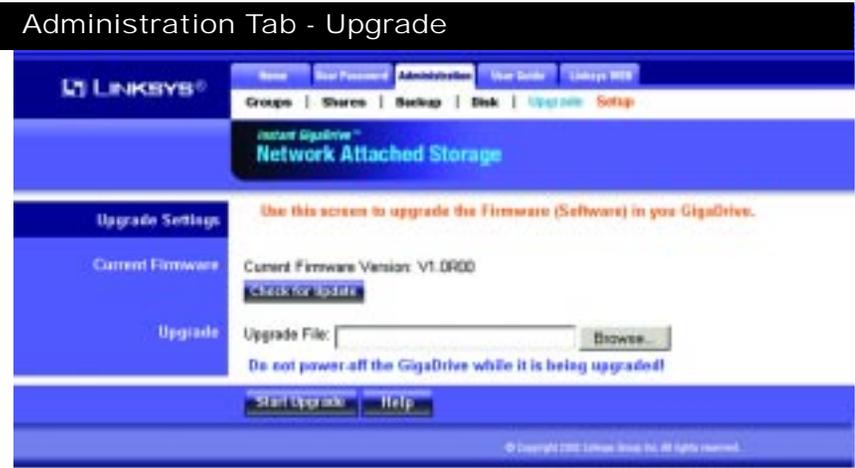
Figure 5-17

As shown in Figure 5-17, the *Upgrade screen* allows you to upgrade the Firmware to the Instant GigaDrive™.

Current Firmware This shows you the current version of the firmware that is on the Instant GigaDrive™. Click the **Check for Update** button to browse for the latest version of firmware.

Upgrade Click the **Browse** button to browse for the latest version of firmware, then click the **Start Upgrade** button.

Click the **Help** button to get more information.

Appendix A: Troubleshooting

1. The Instant GigaDrive™ Utility can't find the Instant GigaDrive™.
   - Check that the Instant GigaDrive™ is properly installed, that the LAN connections are secure, and that the Instant GigaDrive™ is powered ON.
   - If you are using a router, make sure that your PC and the Instant GigaDrive™ are on the same network segment.
   - Make sure that your PC has the TCP/IP network protocol installed. This is done by checking the Network option of the Control Panel. If an entry for TCP/IP -> Network card is not listed, refer to your Microsoft documentation to add it.

2. The Instant GigaDrive™ is configured, but I can't find it in Network Neighborhood.
   - Go to the Find function in the Start menu. Choose **Computer**, then enter the Instant GigaDrive's name. In Windows 2000, go to Files and Folders to search the Computer option.
   - If this doesn't work, choose the **Network** option of the Control Panel to check that a TCP/IP protocol is installed. If it isn't installed, use Add - Protocol - Microsoft - TCP/IP to install it. In Windows 2000, click **Install**, not Add. In Windows NT, click the **Protocols** tab, then **Add**.
   - Check the network bindings. First, ensure that the TCP/IP protocol is bound to your network card (NIC). Then, select your network card in the Control Panel, click **Properties**, and choose the **Bindings** tab. If TCP/IP is not bound (checked), check it.
   - Make sure that the TCP/IP -> network card entry is bound to the Client for Microsoft Networks service. Select the TCP/IP entry for your network Card, click **Properties**, and then choose the **Bindings** tab. If Client for Microsoft Networks is not bound (checked), check it.
   - If you don't have a router, make sure that your IP Address is compatible with the Instant GigaDrive's IP Address. This means it needs to be in the same address range (e.g. 192.168.1.3 to 192.168.1.254) and using the same Subnet Mask (e.g. 255.255.255.0)
   - If you do have a router, check that your Gateway IP Address is set correctly. Ask your LAN administrator for the correct value.
   - Change the name back to the Instant Gigadrive's default name.

3. When I click the Instant GigaDrive's icon in Network Neighborhood, I'm prompted for a password.

This can happen in the following situations:
   - Your Windows Logon name is recognized by the Instant GigaDrive™, but your Logon password is not. Simply enter your password, or make your Windows password the same as the Instant GigaDrive's password.
   - Your Windows Logon name is not recognized by the Instant GigaDrive™, defaulting you to guest access rights. If you are not the Network Administrator, ask your Administrator to create a user name for you. (Use the same name as your Logon name.)
   - You do not have access permission for this share. If you are not the Network Administrator, ask your Administrator to grant you access.

4. When using the web interface, some of the data will not fit on the screen, and there is no scroll bar.
   - You are likely using extra-large fonts in your browser or in Windows. To change your browser's font size, select **View** from your browser's menu, and change the font size there. To change the size of your Windows fonts, go to Display in the Control Panel. Choose **Settings**, then click the **Advanced** button. Change the font size to either Small or Large. Both should work.

5. A print job does not print and no error message is displayed.
   - The amount of free disk space on the Instant GigaDrive™ is probably not sufficient to spool (queue) the print job. The Instant GigaDrive's disk usage can be checked using the *Status - Disk* screen on the Instant GigaDrive's Administrator interface. If this is the problem, you must delete some print jobs.
     1. Select **Printer** from the Status menu of the Instant GigaDrive's Administrator interface.
     2. Use the **Delete Current Job** option to delete the current print job, or **Delete All Jobs** to delete all print jobs.

Appendix B: Installing a Second Hard Drive

Important: This GigaDrive supports IDE Ultra DMA (or UDMA) hard drives with a throughput of 33 - 66 Mbps (ATA/33, ATA/66) and a rotation speed of 5400 or 7200 rpms.

When you're ready to install a second hard drive into the GigaDrive, follow these directions:

1. Power down the GigaDrive by pressing the switch on the back. Then, unplug the Gigadrive.

2. Unlock the second drive bay, as shown in Figure B-1. This bay is empty and is where your new drive will reside.

Figure B-1

3. Make sure that your hard drive's jumpers "Master/Slave" settings are set to "Cable Select" before putting it in the drive tray. For instructions on your hard drive's jumper settings, refer to the documentation that came with your hard drive.

4. Attach the IDE cable from the drive tray to your hard drive, as shown in Figure B-2. The IDE cable is the wider of the two cables in the drive tray. Be sure to plug this securely into your hard drive.

Figure B-2

5. Attach the power cable from the drive tray to your hard drive, as shown in Figure B-3. The power cable is the smaller of the two cables in the drive tray. Be sure to plug this securely into your hard drive.

Figure B-3

6. Review the connections. It should look like the image in Figure B-4. You will want to make sure these connections are tight before securing the drive to the tray.

Figure B-4

7. Insert a screw through the tray's left side, as shown in Figure B-5, and into your drive. Tighten it to secure the drive to the tray on the left.

Figure B-5

8. Insert a screw through the tray's left side, as shown in Figure B-6, and into your drive. To tighten it and secure the drive to the tray on the right, you will need a narrow screwdriver to fit through the hole as shown.

Figure B-6

9. Slide the drive into the second drive bay, as shown in Figure B-7.

Figure B-7

10. Lock the tray into the GigaDrive's bay, as shown in Figure B-8. The tray must be locked in for the GigaDrive to properly function.

11. Plug in the GigaDrive and power it back on.

12. Now, access the GigaDrive's Web-Based Utility, by typing **http://192.168.1.77** in the PC's web browser address window, as shown in Figure B-9.
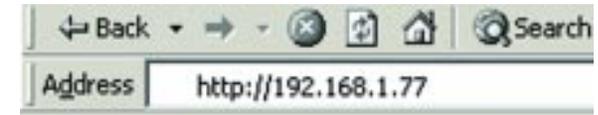
Figure B-8

Figure B-9

13. Click the **Administration** tab and select **Disk**. Under *Format Disk*, Disk 2 will show a status of Not Formatted. Click the **Format Disk** button for Disk 2 to format that hard drive.

Important: Formatting a hard drive will delete all information from that drive. Always verify that you do not wish to save any information on the drive before formatting it.

Figure B-10

14. When formatting is complete, the hard drive is ready to use.

Appendix C: Setting Up the Built-in PrintServer

> ⚠️ **Important:** As screens vary between operating systems, you may find that the screenshots in this section look a little different from your own operating system.

When you're ready to utilize the GigaDrive's built-in PrintServer, follow these simple directions:

1. Power down the GigaDrive by pressing the switch on the back. Then, connect your printer's parallel cable to the port on the back of the GigaDrive, as shown in Figure C-1.

2. Power on the GigaDrive.

Figure C-1

3. When your Windows desktop appears, click the **Start** button. Select **Settings**, and click **Control Panel**, as shown in Figure C-2.

> ⚠️ **Important:** When using Windows XP, perform these steps in Classic Mode. Windows and icons appear different when not in Classic Mode. For instance, in step 3, XP users not in Classic Mode would select **Control Panel** after clicking the **Start** button.

Figure C-2

4. From the Control Panel, double click the **Printers** folder, shown in Figure C-3.

Figure C-3

5. Click the **Add Printer** icon, shown in Figure C-4. This will open the Add Printer Wizard.

Figure C-4

6. When the opening screen to the Add Printer Wizard appears, shown in Figure C-5, click the **Next** button to continue.

Figure C-5

7. As you are adding this printer to your network, select the **Network Printer** option on this screen, as shown in Figure C-6, and click the **Next** button to continue.

Figure C-6

8. The next screen will request how the printer will be located by the GigaDrive. Select **Type the Printer name, or click Next to browse for a printer**. Then, in the field below, enter this location in the following format: **\\Lkg(last six digits of the server name located on the back of the GigaDrive)\Lkg(last six digits of the server name located on the back of the GigaDrive)_p1**. This is the format used by default to locate the printer.

In the example shown in Figure C-7, the last six digits of the server name are 0F0016. Therefore, the information entered is: \\Lkg0F0016\Lkg0F0016_p1.

After you have entered this information, click the **Next** button.

Figure C-7

9. The next screen, shown in Figure C-8, will ask you to install a printer driver. Click the **OK** button to do this now.
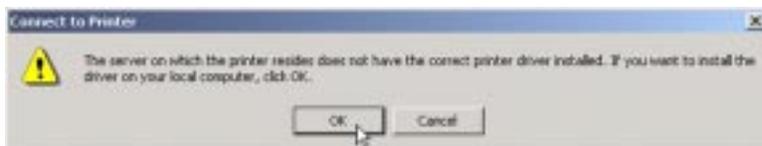
Figure C-8

10. From the *Add Printer Wizard* screen, shown in Figure C-9, select your printer's manufacturer from the list on the left. Then, select your printer's model from the list on the right. Once you've selected your printer, click the **OK** button.

Figure C-9

11. This final installation screen, shown in Figure C-10, will allow you to review your choices before finishing the installation process. Verify that all of the settings are correct before clicking the **Finish** button. If anything is not correct, click the **Back** button to correct the settings.

Figure C-10

12. Clicking the Finish button on the previous screen will return you to the Printers folder. This folder will show all printers available on the network, as shown in Figure C-11. Your new printer should be shown here.

If you wish to change any settings, right-click the printer's icon and select **Properties**. You will be asked if you want to install the driver, but since you have already installed the drivers on this PC, click the **No** button. The Properties window will then open, and you can change the printer's settings.

Figure C-11

Appendix D: Glossary

10BaseT - An Ethernet standard that uses twisted wire pairs.

100BaseTX - IEEE physical layer specification for 100 Mbps over two pairs of Category 5 UTP or STP wire.

Boot - To cause the computer to start executing instructions. Personal computers contain built-in instructions in a ROM chip that are automatically executed on startup. These instructions search for the operating system, load it and pass control to it.

Browser - A browser is an application program that provides a way to look at and interact with all the information on the World Wide Web or PC. The word "browser" seems to have originated prior to the Web as a generic term for user interfaces that let you browse text files online.

Default Gateway - The routing device used to forward all traffic that is not addressed to a station within the local subnet.

DHCP (**D**ynamic **H**ost **C**onfiguration **P**rotocol) - A protocol that lets network administrators manage centrally and automate the assignment of Internet Protocol (IP) addresses in an organization's network. Using the Internet's set of protocol (TCP/IP), each machine that can connect to the Internet needs a unique IP address. When an organization sets up its computer users with a connection to the Internet, an IP address must be assigned to each machine. Without DHCP, the IP address must be entered manually at each computer and, if computers move to another location in another part of the network, a new IP address must be entered. DHCP lets a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network.

DHCP uses the concept of a "lease" or amount of time that a given IP address will be valid for a computer. The lease time can vary depending on how long a user is likely to require the Internet connection at a particular location. It's especially useful in education and other environments where users change frequently. Using very short leases, DHCP can dynamically reconfigure networks in which there are more computers than there are available IP addresses.

DHCP supports static addresses for computers containing Web servers that need a permanent IP address.

DNS - The domain name system (DNS) is the way that Internet domain name are located and translated into Internet Protocol (IP) addresses. A domain name is a meaningful and easy-to-remember "handle" for an Internet address.

Domain - A subnetwork comprised of a group of clients and servers under the control of one security database. Dividing LANs into domains improves performance and security.

Download - To receive a file transmitted over a network. In a communications session, download means receive, upload means transmit.

Driver - A workstation or server software module that provides an interface between a network interface card and the upper-layer protocol software running in the computer; it is designed for a specific NIC, and is installed during the initial installation of a network-compatible client or server operating system.

Dynamic IP Address - An IP address that is automatically assigned to a client station in a TCP/IP network, typically by a DHCP server. Network devices that serve multiple users, such as servers and printers, are usually assigned static IP addresses.

Encryption - A security method that applies a specific algorithm to data in order to alter the data's appearance and prevent other devices from reading the information.

Ethernet - IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium. Has a transfer rate of 10 Mbps. Forms the underlying transport vehicle used by several upper-level protocols, including TCP/IP and XNS.

Firmware - Code that is written onto read-only memory (ROM) or programmable read-only memory (PROM). Once firmware has been written onto the ROM or PROM, it is retained even when the device is turned off.

FTP (**F**ile **T**ransfer **P**rotocol) - A protocol used to transfer files over a TCP/IP network (Internet, UNIX, etc.). For example, after developing the HTML pages for a Web site on a local machine, they are typically uploaded to the Web server using FTP.

FTP includes functions to log onto the network, list directories and copy files. It can also convert between the ASCII and EBCDIC character codes. FTP operations can be performed by typing commands at a command prompt or via an FTP utility running under a graphical interface such as Windows. FTP transfers can also be initiated from within a Web browser by entering the URL preceded with ftp://.

Unlike e-mail programs in which graphics and program files have to be "attached," FTP is designed to handle binary files directly and does not add the overhead of encoding and decoding the data.

Gateway - A device that interconnects networks with different, incompatible communications protocols.

Hardware - Hardware is the physical aspect of computers, telecommunications, and other information technology devices. The term arose as a way to distinguish the "box" and the electronic circuitry and components of a computer from the program you put in it to make it do things. The program came to be known as the software.

HTTP (**H**yper**T**ext **T**ransport **P**rotocol) - The communications protocol used to connect to servers on the World Wide Web. Its primary function is to establish a connection with a Web server and transmit HTML pages to the client browser.

Hub - The device that serves as the central location for attaching wires from workstations. Can be passive, where there is no amplification of the signals; or active, where the hubs are used like repeaters to provide an extension of the cable that connects to a workstation.

IEEE (The **I**nstitute of **E**lectrical and **E**lectronics **E**ngineers) - The IEEE describes itself as "the world's largest technical professional society, promoting the development and application of electrotechnology and allied sciences for the benefit of humanity, the advancement of the profession, and the well-being of our members."

The IEEE fosters the development of standards that often become national and international standards. The organization publishes a number of journals, has many local chapters, and several large societies in special areas, such as the IEEE Computer Society.

IP (**I**nternet **P**rotocol) - The method or protocol by which data is sent from one computer to another on the Internet. It is a standard set of rules, procedures, or

conventions relating to the format and timing of data transmission between two computers that they must accept and use to be able to understand each other.

IP Address - In the most widely installed level of the Internet Protocol (IP) today, an IP address is a 32-binary digit number that identifies each sender or receiver of information that is sent in packet across the Internet. When you request an HTML page or send e-mail, the Internet Protocol part of TCP/IP includes your IP address in the message (actually, in each of the packets if more than one is required) and sends it to the IP address that is obtained by looking up the domain name in the Uniform Resource Locator you requested or in the e-mail address you're sending a note to. At the other end, the recipient can see the IP address of the Web page requestor or the e-mail sender and can respond by sending another message using the IP address it received.

ISP (**I**nternet **S**ervice **P**rovider) - A company that provides individuals and companies access to the Internet and other related services such as Web site building and virtual hosting.

LAN (**L**ocal **A**rea **N**etwork) - A group of computers and associated devices that share a common communications line and typically share the resources of a single processor or server within a small geographic area (for example, within an office building).

Mbps (**M**ega**b**its **p**er **s**econd) - One million bits per second; unit of measurement for data transmission.

Network - A system that transmits any combination of voice, video and/or data between users.

Network Mask - Also known as the "Subnet Mask".

NIC (**N**etwork **I**nterface **C**ard) - A board installed in a computer system, usually a PC, to provide network communication capabilities to and from that computer system. Also called an adapter.

Packet - A unit of data routed between an origin and a destination in a network.

Plug-and-Play - The ability of a computer system to configure expansion boards and other devices automatically without requiring the user to turn off the system during installation.

PrintServer - A hardware device that enables a printer to be located anywhere in the network.

RJ-45 (**R**egistered **J**ack-**45**) - A connector similar to a telephone connector that holds up to eight wires, used for connecting Ethernet devices.

Router - Protocol-dependent device that connects subnetworks together. Routers are useful in breaking down a very large network into smaller subnetworks; they introduce longer delays and typically have much lower throughput rates than bridges.

Server - Any computer whose function in a network is to provide user access to files, printing, communications, and other services.

S.M.A.R.T. - (**S**elf **M**onitoring **A**nalysis and **R**eporting **T**echnology) Hard drive technology that reports its own degradation, enabling the operating system to warn the user of potential failure.

Software - Instructions for the computer. A series of instructions that performs a particular task is called a "program." The two major categories of software are "system software" and "application software." System software is made up of control programs such as the operating system and database management system (DBMS). Application software is any program that processes data for the user.

Static IP Address - A permanent IP address that is assigned to a node in an IP or a TCP/IP network.

Storage - The semi-permanent or permanent holding place for digital data.

STP (**S**hielded **T**wisted **P**air) Telephone wire that is wrapped in a metal sheath to eliminate external interference.

Subnet Mask - The method used for splitting IP networks into a series of subgroups, or subnets. The mask is a binary pattern that is matched up with the IP address to turn part of the host ID address field into a field for subnets.

Switch - 1. A data switch connects computing devices to host computers, allowing a large number of devices to share a limited number of ports. 2. A device for making, breaking, or changing the connections in an electrical circuit.

TCP (**T**ransmission **C**ontrol **P**rotocol) - A method (protocol) used along with the IP (Internet Protocol) to send data in the form of message units (datagram) between network devices over a LAN or WAN. While IP takes care of handling the actual delivery of the data (routing), TCP takes care of keeping track of the individual units of data (called packets) that a message is divided into for efficient delivery over the network. TCP is known as a "connection oriented" protocol due to requiring the receiver of a packet to return an acknowledgment of receipt to the sender of the packet resulting in transmission control.

TCP/IP (**T**ransmission **C**ontrol **P**rotocol/**I**nternet **P**rotocol) - The basic communication language or set of protocols for communications over a network (developed specifically for the Internet). TCP/IP defines a suite or group of protocols and not only TCP and IP.

Throughput - The amount of data moved successfully from one place to another in a given time period.

Upgrade - To replace existing software or firmware with a newer version.

Upload - To transmit a file over a network. In a communications session, upload means transmit, download means receive.

URL (**U**niform **R**esource **L**ocator) - The address that defines the route to a file on the Web or any other Internet facility. URLs are typed into the browser to access Web pages, and URLs are embedded within the pages themselves to provide the hypertext links to other pages.

UTP - Unshielded twisted pair is the most common kind of copper telephone wiring. Twisted pair is the ordinary copper wire that connects home and many business computers to the telephone company. To reduce crosstalk or electromagnetic induction between pairs of wires, two insulated copper wires are twisted around each other. Each signal on twisted pair requires both wires. Since some telephone sets or desktop locations require multiple connections, twisted pair is sometimes installed in two or more pairs, all within a single cable.

WAN (**W**ide **A**rea **N**etwork)- A communications network that covers a relatively large geographic area, consisting of two or more LANs. Broadband communication over the WAN is often through public networks such as the telephone (DSL) or cable systems, or through leased lines or satellites. In its most basic definition, the Internet could be considered a WAN.

Workgroup - Two or more individuals that share files and databases.

Appendix E: Specifications

Model Number	EFG80
Standards	IEEE 802.3, IEEE 802.3u
Protocols	SMB/CIFS over TCP/IP
Network Port	One 10/100 RJ-45 Port
Printer Port	One DB-25 Standard Parallel Port
Cabling Type	UTP Category 5 Ethernet Network Cable or better
Topology	Star
LED Indicators	Rear: 10 and 100Mbps Mode Front: Ready, Error, LAN, Disk, Disk Full, Back Up
Switches	Power, Reset, Uplink

Environmental

Dimensions (W x H x D)	7.0" x 6.5" x 13.6" (180 mm x 166 mm x 346 mm)
Weight	11.29 lbs without HDD (5.13 kg)
Power	12V DC, Maximum 5 Amps, 100-240V AC, 50-60Hz Power Adapter Provided
Certifications	FCC Class A, CE Mark
Operating Temp.	41°F to 104°F (5°C to 40°C)
Storage Temp.	14°F to 140°F (-10°C to 60°C)
Operating Humidity	10% to 80% Non-condensing
Storage Humidity	5% to 90% Non-condensing

Appendix F: Contact and Returns Information

For help with the installation or operation of the Instant GigaDrive™, contact Linksys Customer Support at one of the phone numbers or Internet addresses below.

Sales Information	800-546-5797 (1-800-LINKSYS)
Technical Support*	800-326-7114 (toll free from U.S. or Canada)
RMA Issues	949-271-5461
Fax	949-265-6655
Email	support@linksys.com
Web site	http://www.linksys.com
	http://support.linksys.com
FTP Site	ftp.linksys.com

* Linksys does not provide support for Macintosh operating systems.

The Linksys Instant GigaDrive™ Series EtherFast® Network Attached Storage Return Policy

This product is guaranteed free from physical defects under normal use for two years. If the product becomes defective during this warranty period, call Linksys Technical Support to obtain a Return Merchandise Authorization number. Warranty is for Repair and Replacement only. Linksys is not responsible for credit or refunds.

Linksys will not be held responsible for any data or file loss recovery under any circumstances.

Linksys offers cross shipments, a faster process for processing and receiving your replacement. Linksys pays for UPS Ground only. All customers located outside of the United States of America and Canada shall be held responsible for shipping and handling charges.

LINKSYS®

http://www.linksys.com