Verbatim®

Gigabit Ethernet Hard Drive

User Guide

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Introduction

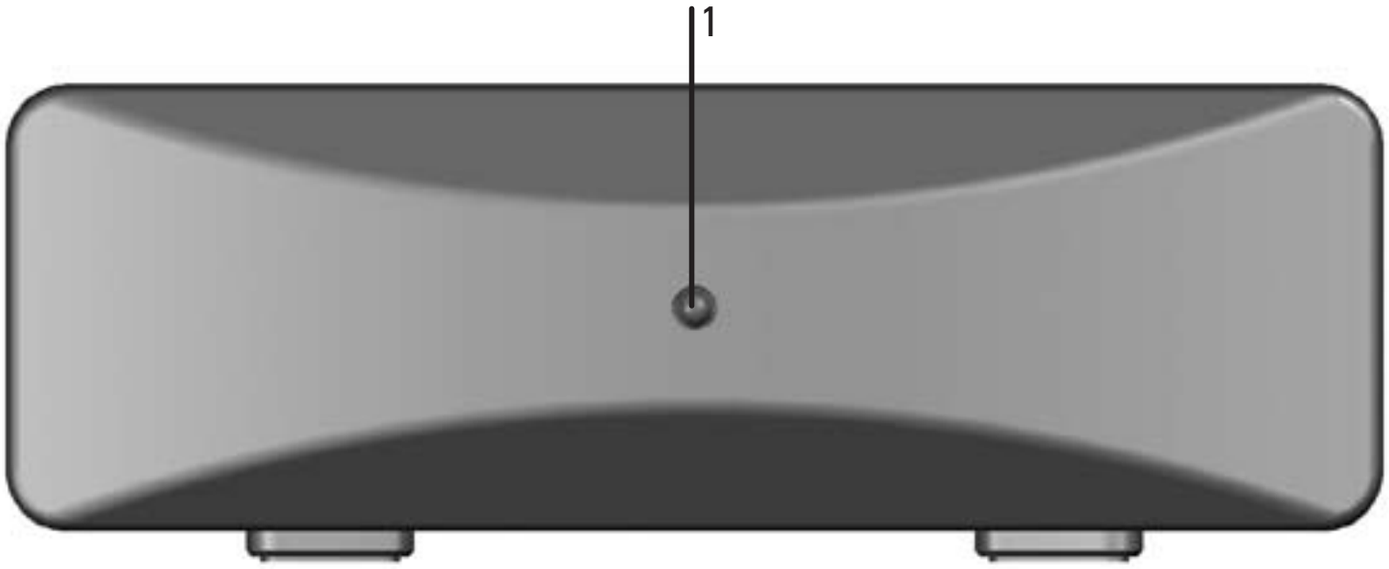
Your Verbatim Network Attached Storage (NAS) drive is a versatile external hard drive featuring high-performance storage with an Ethernet interface. Once your drive is connected properly to your network, you will be able to use it as you would any hard drive for storing your data and for performing data back-up functions. Before you begin to use the NAS drive there are a few important things to learn about your new product.

Controls, Connectors and Indicators

First familiarize yourself with the control keys and the various connectors on the unit.

Front Panel Area

The front panel contains only the status LED, as illustrated below.

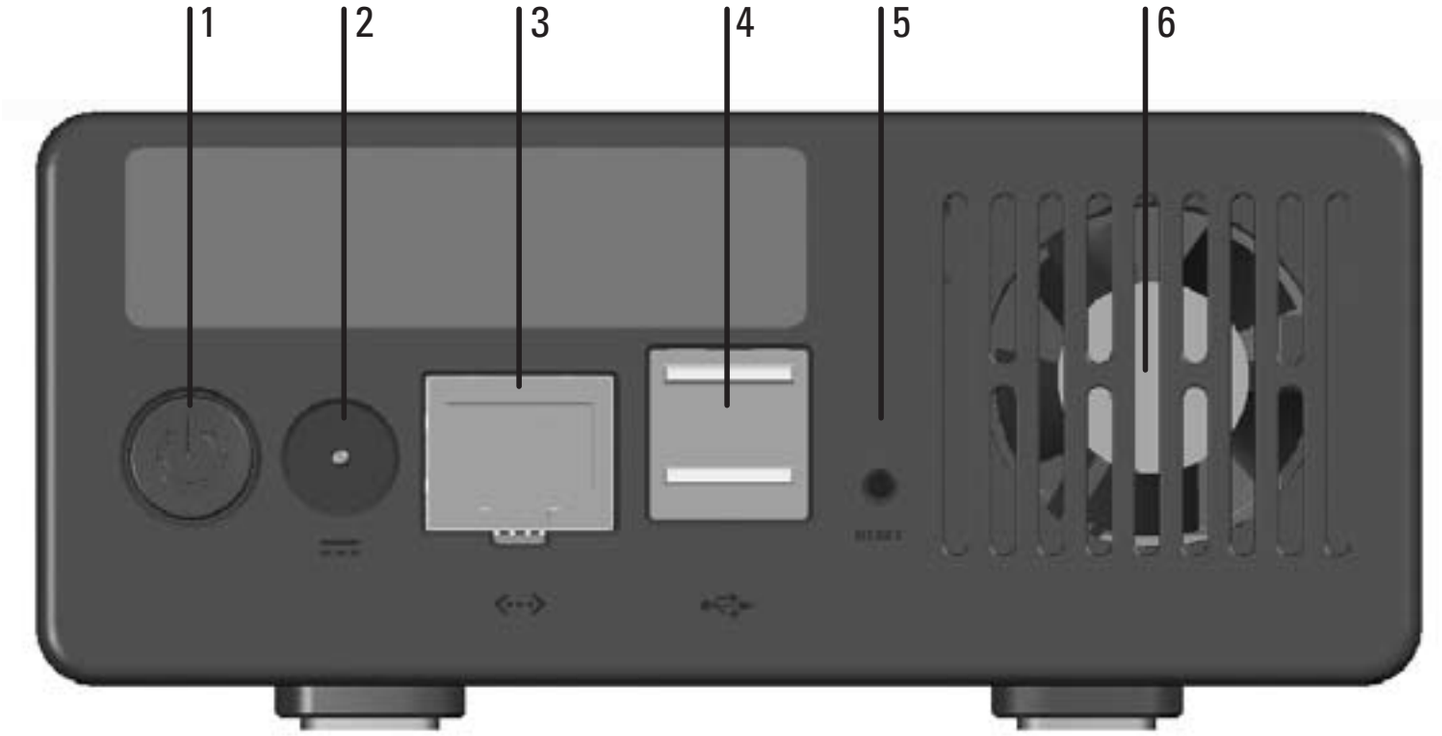


1. The green LED will come on to indicate the power-on state. During the power down sequence, the LED will flash for about 15 seconds while the drive's internal software shuts down in an orderly fashion. The LED will then turn off to indicate that the drive is

now fully turned off.

Rear Panel Area

Along the rear panel you will find the interface connectors and a recessed micro-switch that is used for reset functions. Refer to the figure below.



1. ON/OFF Button. Once the AC Adapter has been properly connected to the NAS drive and an AC outlet, you can press the ON/OFF button to power on the drive. To turn off the drive, press the ON/OFF button again. The LED will flash for about 15 seconds while the drive shuts down as described above.
2. DC Input Connector. Connect the DC cable of your included AC Adapter to the DC Input Connector.
3. Ethernet Connector. Use this connector to attach to your network equipment. The connector contains status LEDs to indicate communications status.
4. USB-A Connectors (2 each). Use either of these connectors for attaching a USB printer, USB flash disk, or other USB storage device.

5. Reset Button. If the NAS drive is having a problem connecting to the local area network (LAN) or appears to be hung, press the reset button momentarily using the end of a paper clip. This will cause the unit to reset, similar to rebooting your PC. If the problem persists, or if you are unsure of current settings (such as forgetting your administration password), press and hold in the Reset button for 5 seconds. This will restore the factory default settings.
6. Fan. The fan is designed to turn on for added cooling whenever the internal temperature rises above the thermal set point. To allow for adequate air flow take care not to block the air vents. Since the spinning disk will generate heat even when no data is being transferred, you can help to prevent the fan from remaining on needlessly by shortening the disk spin-down time (see later under NAS Administration Reference / Advanced / Maintenance / Disk Utility).

About the Hard Disk

The NAS drive internal hard disk comes pre-formatted in EXT2 format for immediate use for network storage.

Note: Capacity dependent on model. 1 MB = 1,000,000 bytes/1 GB = 1,000,000,000 bytes/1 TB = 1,000,000,000,000 bytes. Some capacity used for pre-loaded software, formatting and other functions, and thus is not available for data storage. As a result, and due to differing calculation methods, your operating systems may report as fewer megabytes/gigabytes/terabytes.

Your product's hard drive is a complex electronic storage system and should be handled with care, as you might treat a sensitive portable computer or other state-of-the-art consumer electronics product. Do not subject it to shock, high temperatures, or strong magnetic fields.

To extend the useful life of your NAS drive, turn the unit OFF when not in use.

Locating NAS Drive on Your Desk

Place the NAS drive on a sturdy desk or table that is free from clutter that could block airflow around the unit.

Bundled Software

The included CD-ROM contains copies of the User Guide, as well as three software applications: 1) Finder.exe, 2) Nero backup software and 3) TorrentFlux.

Finder.exe

This is a Windows application that can locate all Verbatim NAS drives on your LAN and display the corresponding IP address of each drive. To run this application, copy the Finder.exe file to your client Windows computer and double-click on the file to launch it.

Backup Software

Nero backup software is included on CD-ROM. To install this application on one of your client Windows computers, open the Nero folder on the CD and then double click the setupx file to start installation. The Nero Installation window will appear. Follow the setup wizard to install the software. To backup files to your NAS drive using Nero, you must first assign a drive letter to your destination folder, as described later under NAS Drive Operation / Sharing files using Windows / Browse My Computer.

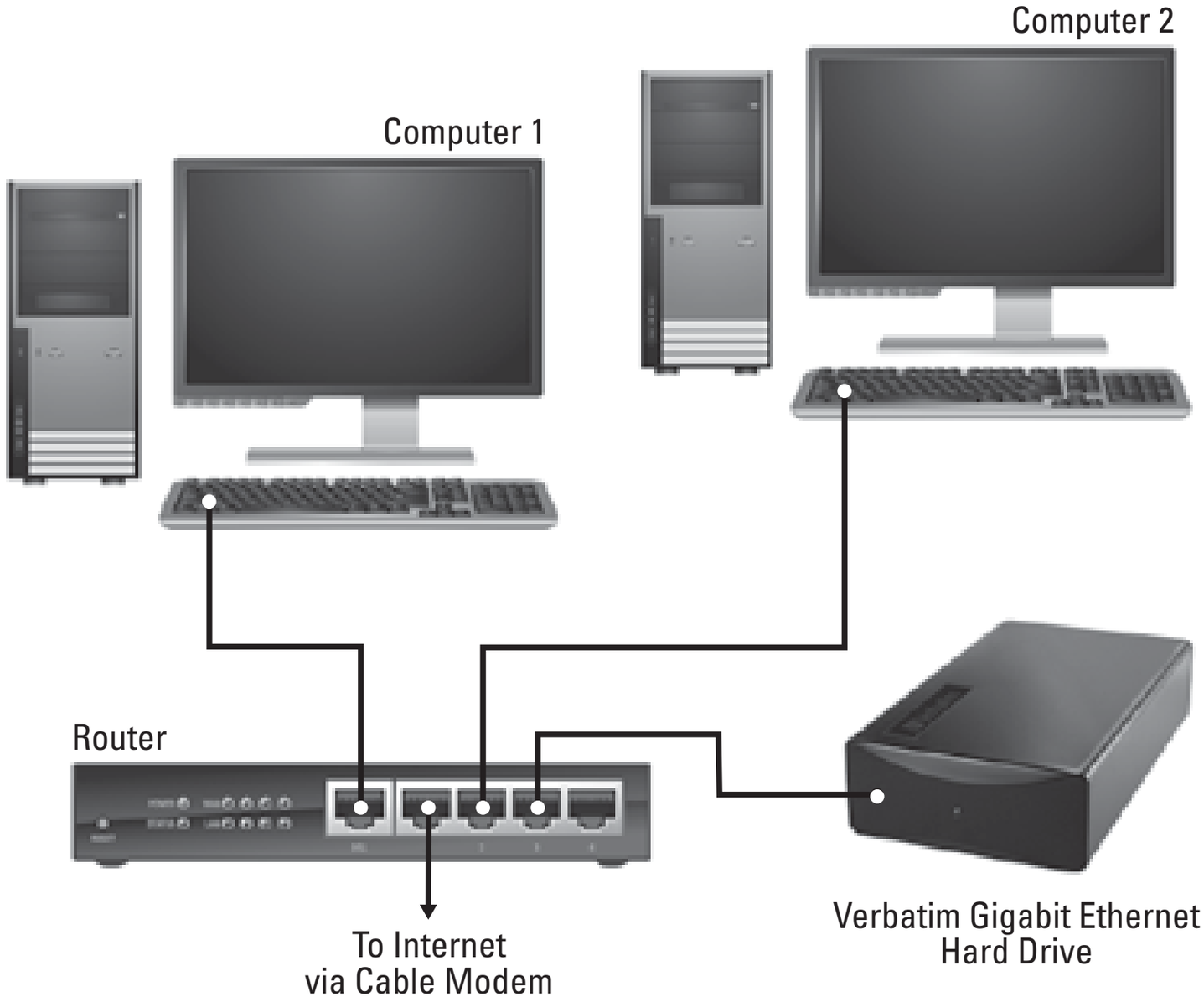
TorrentFlux

TorrentFlux is an implementation of the BitTorrent protocol. Installation of this optional network service is described later in NAS Administration Reference / Advanced / Maintenance / Install New Service.

Connecting To Your Network

Installing the NAS drive requires that you have an available Ethernet port on a router or switch. Use the supplied CAT-6 Ethernet cable to connect your NAS drive to your LAN.

Power up your router (or Ethernet switch) first, and then power up the NAS drive. The figure below provides one example of a typical LAN configuration.



Before attempting to establish a connection to the network it would be useful first to review some background information about how the NAS drive handles data over the network. Basic to this understanding are the fundamental concepts of user accounts and shared folders.

About NAS Drive User Accounts

The NAS drive keeps track of data stored by its network users by managing the data's destination **folder** (also referred to herein as a "shared folder" or simply a "**share**"). Furthermore, the NAS drive must keep track of who may read from, and write to, each folder. It does this by setting up **user accounts** and **groups**. A group is a collection of specific user accounts. When you assign access privileges to a new share you have the option of either making assignments for individual user accounts, or for an entire group of users at once by referring to the group's name.

The default factory settings provide for two pre-defined user accounts, each with their own unique properties. These user accounts are:

- admin
- guest-share

Each of these two user accounts has an associated pre-defined folder. The name of the folder is the same as its associated user account. The name "guest-share" also happens to be pre-defined as a group name. Additionally, there is a pre-defined folder called "public" that initially is not associated with any user account. These properties are summarized in the table below.

Pre-defined Name	Group	User Account	Folder (Share)
public			public
admin		admin	admin
guest-share	@guest-share	guest-share	guest-share

Here are other initial properties of these pre-defined groups, accounts, and shares:

- The folder "public" can be accessed by anyone on the LAN who has set up a user account. Access to this folder requires authentication using your user name and password.

- The folder “guest-share” can be accessed by anyone on the LAN, even if they have not set up a user account. Access to this folder does not require entering a user name and password. This folder can also be accessed by anonymous FTP.
- The group @guest-share contains two members, which are user “admin” and user “guest-share”.
- The folder “admin” is a private folder for user “admin”. This means only user “admin” can access this folder.

By using the web-based administration tool you can modify these initial properties.

Before can you can begin storing data (other than as user “admin” or as an anonymous user to the guest-share folder), you must use the web-based administration tool to setup a new user account that defines your User Name and Password. Furthermore, you have the option to define other properties for your user account. For example, each user can optionally be given their own private folder, which is automatically assigned the same name as that user’s User Name. A user can also be given read-only-privileges, or read/write-privileges, to other folders on the drive.

Connecting the NAS Drive to Your LAN

Now that you have some understanding of user accounts, you are ready to connect your NAS drive to the LAN. Follow these steps.

1. Ensure that your LAN equipment is powered on and that the LAN is operating properly.
2. We recommended that you follow the directions of your LAN equipment to enable a Dynamic Host Configuration Protocol (DHCP) server. This may be referenced in your equipment’s documentation as “Assign IP addresses automatically”.
3. Since you will administer the NAS drive settings using a web browser on your PC or Mac, ensure that this PC or Mac is powered on and connected to the LAN.
4. Connect the included CAT-6 Ethernet cable from the Ethernet port on the NAS drive to an Ethernet switch (100 Base-T or 1000 Base-T), or a wired or wireless router. Make sure that the NAS drive and the client computer are on the same subnet

domain (e.g., 192.168.1.x).

5. Connect the included AC Adapter to the NAS drive, and then to a wall outlet.
6. Press the ON/OFF button on the rear of the NAS drive. The front green LED will come on to indicate that the unit is now powered on.
7. Wait for the NAS drive to boot up and to auto-configure its connection on the network. Depending on your particular LAN configuration and settings, this may take several minutes. The following protocols will be followed during auto-configuration, depending on current network settings:
    a. DHCP client is enabled by default. Therefore, your router or other LAN equipment that is providing the DHCP service will automatically assign an IP address to the NAS drive and complete the network connection.
    b. If no DHCP server is available on your isolated network, then the auto-negotiation process will proceed in one of two ways, depending on whether Bonjour protocol is enabled or disabled. Bonjour protocol is built-in to recent Mac OS X systems, and can also be optionally installed on Windows systems.
        i. Apple Bonjour protocol is enabled by default. In this case if you are connecting to an isolated Bonjour-enabled network and no DHCP server is present, your NAS drive will negotiate an address within the Bonjour range of **169.254.x.x**. If you want to determine the specific address within this range, you can use the network "ping" function to "ping verbatimnas" or "ping verbatimnas.local". Alternatively, if you have a PC on the LAN, you can run the included Finder.exe utility (provided to you on CD) to determine the address.
        ii. If the NAS drive has been previously accessed in order to disable Bonjour and you are now connecting to a network with no DHCP server present, then a different auto-negotiation takes place. In this case the NAS drive will automatically launch its internal DHCP server. This will result in the NAS drive taking the default IP address of **192.168.1.1** and will also assign addresses (in the range of 192.168.1.2-50) to other DHCP clients on the network .

8. After successfully connecting to your network you will be able to see the NAS drive on your network. Its default name is “verbatimnas” and it will be located in the network workgroup named “Workgroup”. In Windows go to My Network Places/ Entire Network / Microsoft Windows Network / Workgroup, or in Mac OS X go to Finder / Network / Workgroup. You can open the device to see the following default folders:
    a. admin
    b. guest-share
    c. public

Though you are now ready to begin storing data on your drive, at this point you have only the two default user accounts set up. To set up other user accounts, and to configure other basic system settings, you should continue setup using the web-based administration tool described in the next section.

Web-Based Administration Tool

The web-based administration tool is used to modify all internal settings of your NAS drive. It is accessed using your computer’s web browser (such as Internet Explorer, Safari or Netscape). To access the administration tool, your PC or Mac should be on the same subnet as the NAS drive.

Administration Login

In most cases you need only to enter the default hostname (i.e., “//verbatimnas” for Windows, or “//verbatimnas.local” for Bonjour) in your browser’s address window to access the administration tool. If for some reason the default hostname was not assigned to the NAS drive’s IP address during auto-configuration, then you can alternatively enter the NAS drive’s IP address into the browser’s address window.

As described previously, your router or other network equipment will have assigned the IP address automatically, or the drive will have taken one of its default addresses (either a Bonjour address **169.254.x.x** or the non-Bonjour address **192.168.1.1**). If your router

assigns addresses automatically, your router's manual will describe how to determine your drive's IP address. Alternatively, you can find your drive's IP address using the included Finder.exe utility as described above. After your browser retrieves the initial web page from the NAS drive, the browser window will present the following login screen:

From this screen you must enter the following default Username and Password:
Username: admin
Password: admin

Basic Settings for Initial Setup

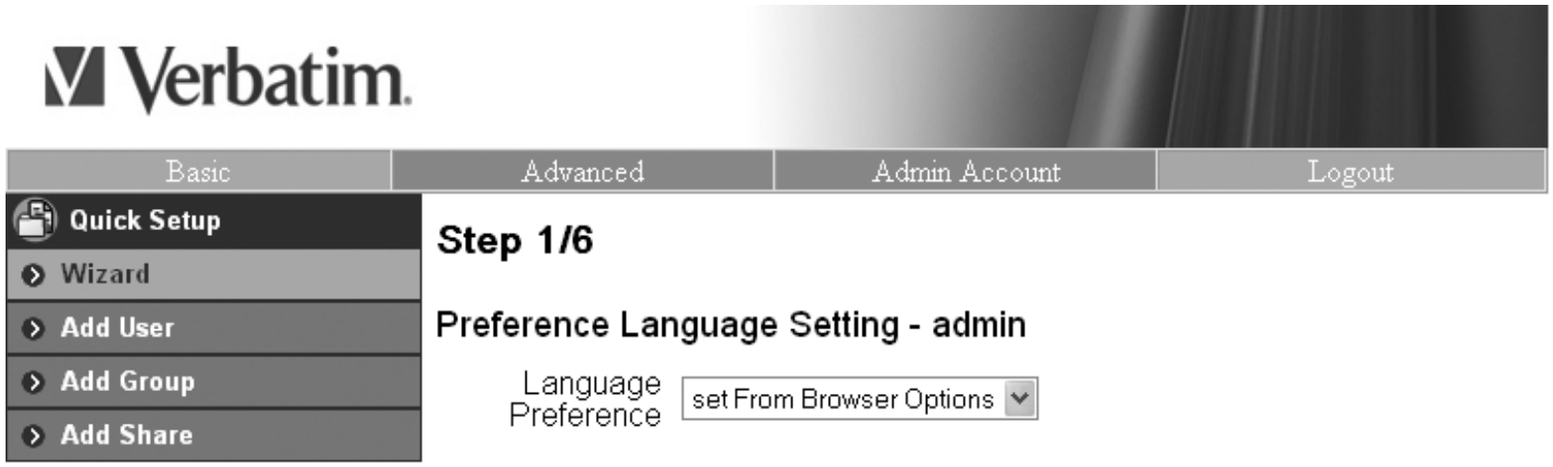
Now, from within the administration tool perform the following steps to define the basic settings. For more advanced features note that a full description of all settings is provided later under "NAS Administration Reference".

1. Click on **Quick Setup** to expand the selection group.

Set Language, Password, Hostname, IP Address, and Time

A special setup wizard will lead you through the configurations for user interface language, administrator password, hostname, IP address, and time.

2. Select **Wizard**.



3. Select your language preference from the pull-down menu. The selection “set from browser options” will automatically set the administrator language to the current browser language setting. If the browser language is not supported in the administrator, the default language of English will be enabled. Press **Next** to continue.
4. The next screen allows you to define a new password for the user “admin”. If you want to keep the current password, simply press **Next** to advance to the next screen. The password must be a minimum of 5 characters and a maximum of 8 characters.
5. The next screen allows you to define a new Hostname for the NAS drive. If you want to keep the current Hostname, simply press **Next** to advance to the next screen.
6. The next screen allows you to select between automatic and static addresses for the NAS drive’s IP Address and Domain Name System (DNS) address. It is recommended that your network equipment be enabled to provide DHCP service, and that both settings on this screen remain at the factory settings.

   Alternatively, if your network requires that you define static addresses, then you may enter them in the form provided.

Press **Next** to continue.

7. The next screen allows you to manually set the date and time, or to use an available Network Time Protocol (NTP) server. It is useful to set the correct date and time because time stamps are used in the various status logs that are described later in this manual. After filling in your selections, press **Next**.
8. The settings made in the previous steps are summarized on this screen for your review. You may either go back to edit your settings, or press **Complete** to save the settings as shown.

Add New User Account

9. Next setup a user account by selecting the **Quick Setup** / **Add User** button.

Fill in the initial screen with a User Name and Password. It is recommended that these fields match the User Name and Password that this user normally enters when logging into Windows or to Mac OS X. The User Name must be lower-case and may

be a maximum of 20 alphanumeric characters, without spaces. The User Name must begin with an alphabetic character.

Note: If your Windows username currently contains a space character, or begins with a number, you may want to modify your Windows username slightly so that it can follow the same format required by the NAS drive. For Mac OS X user accounts, your username is automatically saved without spaces as a field called "Short Name". In this way the "Short Name" already follows the format required by the NAS drive.

Also fill in the password. The password may be a maximum of 16 alphanumeric characters, without spaces. If you leave the password field blank, the NAS drive will accept this as a null password. This means that you will not need to fill in any password in the future when accessing the NAS drive using this username.

A description of this user may optionally be entered in the field provided.

If you want to create a private folder that only this network user can access, then check the box marked "Create Private Folder". This folder cannot be accessed by any other user account, except for the "admin" user account. The folder name will automatically be given the same name as User Name. The path of your newly created private folder will automatically be set to /mnt/ide1.

Here you can set a maximum storage limit or quota (in megabytes) for the user. Note that the quota function is not supported if the disk has been formatted to FAT32.

When done with this form, press **Next** to continue.

10. The next screen allows you to assign this user to an existing group. As described above, the initial factory setting provides for the default group named "@guest-share". When done with this form, press **Next** to continue.
11. The final screen for adding a user allows you to assign access privileges to currently

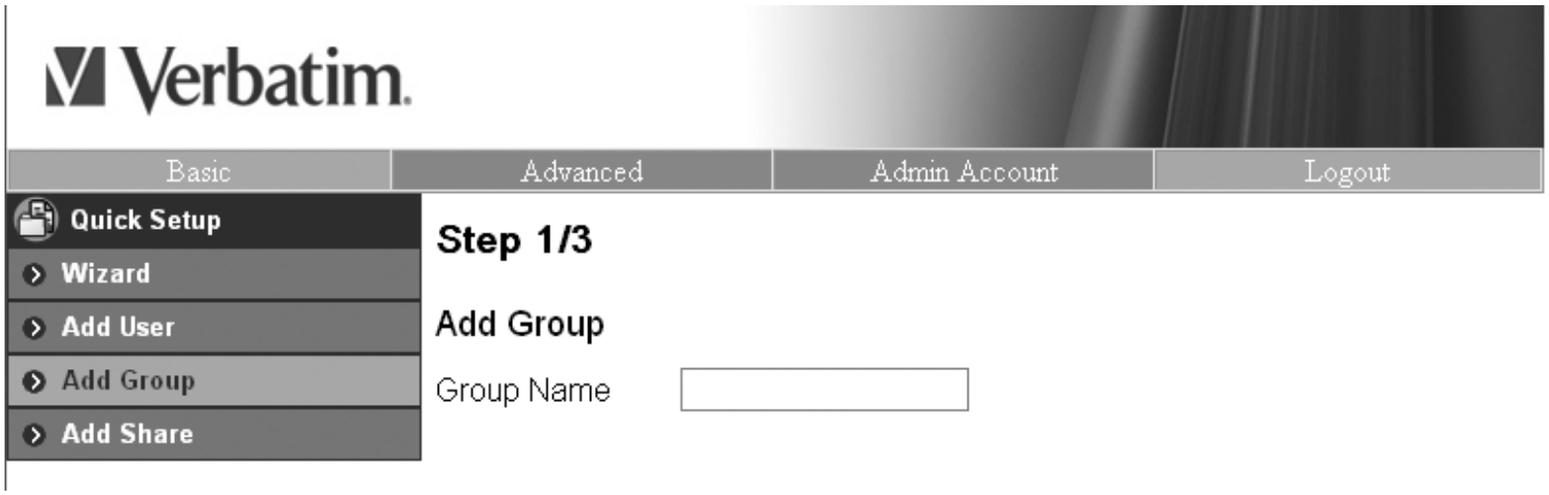
defined shares. Of course, if you checked “Create Private Folder” in step (9), then read/write access has automatically been provided to this user’s private folder.

Though the initial factory setting provides for three default shares (admin, guest-share, and public), only “public” is available for selection for access to new user accounts.

When done with this form, press **Complete**.

Add New Group

12. Next you may optionally setup a new group. If you do not want to set up a group at this time, you may jump ahead to Step 15.
    Begin group setup by selecting the **Quick Setup** / **Add Group** button.



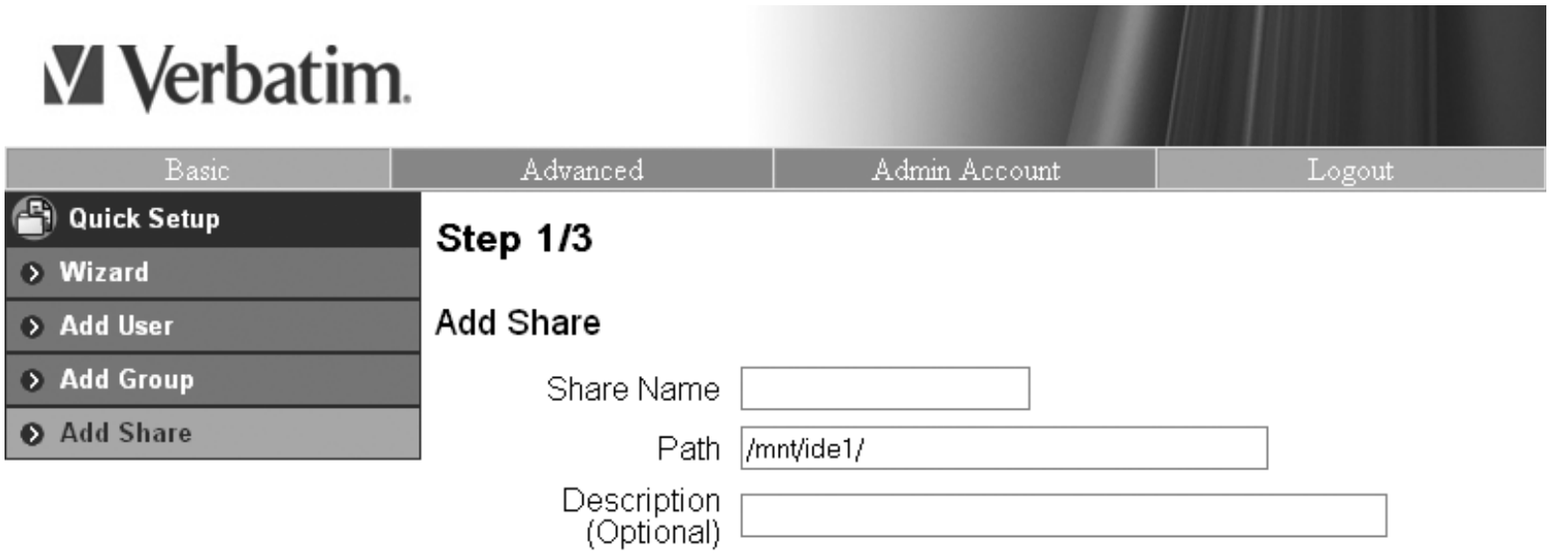
    Fill in the initial screen with your group’s name. The group name must be lower-case and may be a maximum of 20 alphanumeric characters, without spaces. The group name must begin with an alphabetic character. Press **Next** to continue.
13. The next screen allows you to assign any of the current users to your new group. When done with this form, press **Next** to continue.
14. The next screen allows you to assign share access privileges for the new group. Each of the existing shares may be setup for no access, read-only access, or full

read/write access. When done with this form, press **Complete**.

Add New Shared Folder

15. The final procedure for Quick Setup allows you to optionally setup a new share. If you do not want to set up a share at this time, you may exit the administration tool as described in Step 18.

    Begin share setup by selecting the **Quick Setup** / **Add Share** button.



    Fill in the initial screen with a name for your new share. The share name must be lower-case and may be a maximum of 20 alphanumeric characters, without spaces. The share name must begin with an alphabetic character. After entering the name, the path for the new share will automatically be displayed. A description of this share may optionally be entered in the field provided. When done with this form, press **Next** to continue.

16. The next two screens allow you to assign access privileges for the new share. Access is defined separately for Server Message Block (SMB) / Common Internet File System (CIFS) access than it is for Network File System (NFS) access. Use the first of the two screens, titled “Windows, FTP Access” to assign access under SMB/

CIFS.

You can assign read-write access for all users and groups by checking the box marked “Allow for all”. Alternatively, you can assign no access, read-only access, or read-write access privileges individually for each user and group. Note that group names in the list provided are denoted with the “@” character as the first character in the name.

When done with this form, press **Next** to continue with assignment of NFS access privileges.

17. The next screen is for NFS access. It will be of interest primarily if you plan to operate Linux machines on your LAN and want to use NFS protocol for file sharing. To enable NFS access to this share from all users, you can check the box marked “Allow for all”. If this box is not checked then you may individually assign NFS access from specific IP addresses, or from specific subnets. When done with this form, press **Complete**.
18. You have now completed the Basic setup. You may either return to Step 9 to add additional user accounts, groups or shares, continue to set more advanced features as described under “NAS Administration Reference”, or press **Logout** to leave the administration tool and begin using the NAS drive to store and share your data.

NAS Drive Operation

Once the NAS drive is connected to your network and has been configured for your network environment, it can be accessed from any computer within the same subnet on your LAN. Furthermore, more advanced users may choose to configure name servers (such as WIN servers or DNS servers) in order to access the drive from a different subnet. You will be able to:

- Drag and drop files to NAS drive

- Copy and paste data to NAS drive
- Make and delete folders
- Share files and folders
- Back-up your data

How you access the drive will depend on your computer's operating system. A brief overview for accessing files for both Windows and Mac OS X is provided next. You should consult your computer's documentation for more detailed explanations of file sharing using your specific operating system.

Sharing files using Windows

The NAS drive supports Microsoft Common Internet File System (CIFS), also known as Server Message Block (SMB) protocol. The SMB protocol is implemented on the NAS drive using the popular Samba software. Any PC running Windows 2000, Windows XP, or Windows Vista can access shared files on the NAS drive. Once you can view the folder in My Computer or in Windows Explorer, you can drag and drop files to this folder like you can with any folder.

There are several alternative ways to view the NAS shared folders in Windows. For example, you can

- Use the **Run** dialogue box accessed through the **Start** button in the system tray.
- Browse through the **Network Neighborhood**.
- Use the **Search** dialogue box accessed through the **Start** button or File Browser.
- Look through devices in **My Computer**.

Run Dialogue

To find the NAS drive using this method select **Start** in the system tray and select **Run**. In the **Open**: field provided enter "\\verbatimnas" and then press **OK**. You may alternatively enter "\\" followed by the NAS drive's IP address and then press **OK**.

Browse Network Neighborhood

Open the File Browser and double-click on **Network Neighborhood** or **My Network**

Places. Browse to **Workgroup** to find the NAS drive shared folders.

Search Dialogue

Select Start in the system tray and select **Search**. Use the Search dialogue to search for **Computers**. For the computer name to search for enter “verbatimnas” and then press **Search Now** to find the connected NAS drive. Double-click the NAS drive entry to connect and view its shared folders.

Browse My Computer

Open **My Computer** and double-click on **My Network Places**. Browse to **Workgroup** to find the NAS drive share folders.

Once you have located the attached NAS drive’s shared folders, you can map a drive letter to a folder. [You must assign a drive letter in order to save files to the NAS drive using the bundled backup software.] To do this, right-click on the folder and select “map network drive”. Fill out the dialogue box that Windows presents (input the logical drive letter and enter the path of a network share directory) and then select **Finish**. Now you can log in using the Samba User Account that you created following the “Add User” dialogue. The NAS drive will show up in ‘My Computer’ under ‘Network Drives’.

Sharing files using Mac OS X

A Mac running Mac OS X can access a connected NAS drive. Click on **Network**, open the folder “Workgroup” and locate the “verbatimnas” device. Double-click “verbatimnas” to open the connection dialogue box.

When prompted to “Select SMB/CIFS shared volume you want to connect to” use the pull-down menu to select one of the current shares. You will next be prompted to authenticate by entering your username and password. For “username” use the Mac OS “Short Name” that you used to create your account on the NAS drive.
After completing authentication your shared folder will appear on your desktop. You can now drag and drop files to this folder as you can for any folder.

Attaching USB Devices

Your NAS drive contains two USB-A ports on the rear panel. A USB-A port can be used to attach either a USB printer or a USB storage device, such as a flash disk. This section describes how to install and use these USB devices while the NAS drive is connected to your LAN.

Attaching a Printer

Once your USB printer is attached and installed to the connected NAS drive, you can send print jobs to this printer from any user account. Follow these steps to attach and install your USB printer:

1. Attach the USB cable from your USB printer to one of the USB-A connectors on the rear panel of the NAS drive.
2. Power on the printer.
3. The Print Server setting within the web-based administration tool is enabled as the factory default setting. If it has been previously disabled for any reason, enter the administration tool now and check the box labeled **Enable** under Advanced / File and Print / Printer Server. You may also use this opportunity to enter a description for your printer.

From this point, you must follow the instructions of your computer's operating system to ensure that the printer is recognized and that the proper printer driver is installed. For reference, the following additional steps apply for Windows 2000, Windows XP and Windows Vista.

4. From your file browser or network places, open the verbatimnas folder and locate the shared printer, which by default will have the name "lp".
5. Double-click on the "lp" folder and Windows will ask you if you want to install the printer drivers, click "Yes".
6. The "Select Printer" window will open and prompt you to select your printer brand name, model name and number. After your printer model has been selected, the printer drivers will be installed on your computer. If you cannot find your printer in the

list, you can alternatively insert the driver CD-ROM from your printer manufacturer and follow the dialogue for installing a driver from CD.

7. You can verify that the verbatimnas printer has been installed by going to Advanced/ Printers and Faxes. Under Printers and Faxes you will see the verbatimnas printer icon.

Now your printer is ready to accept print jobs like any other printer on your system.

Attaching a USB Storage Device

You may also use one of the two USB-A ports for attaching another USB storage device, like a flash drive. Once your storage device is attached and installed to the connected NAS drive, you can drag and drop files to it like any other storage device.
These types of USB storage devices can be attached:

- Flash Drive
- Hard Drive
- Memory Card Reader

Follow these steps to attach and use your USB storage device:

1. Attach the USB cable from your device (or the USB connector attached to your device) to one of the USB-A connectors on the rear panel of the NAS drive.
2. If your device is self-powered, turn on the power to your device.
3. Your device should now be visible through your file browser. If it is not immediately visible it may mean that it is not formatted in a format compatible with the NAS drive. In this case you must take the additional step outlined in Step 4.
4. You must reformat the device using the administration tool before NAS drive will recognize it.
   BEFORE PROCEEDING, MAKE CERTAIN THAT YOU HAVE SAFELY SAVED ALL OF YOUR DEVICE'S DATA TO ANOTHER STORAGE DEVICE.
   Enter the administration tool and go to the screen at Advanced / Maintenance / Disk Utility. Highlight your device in the list of devices. Its Mount Point will be /mnt/USBx where x is a sequence number. Select the FAT32 Format Type in the drop-down menu.

Now press the **Format** button. You will be prompted to confirm. Press **YES** to continue. After successfully reformatting your device, you can logout of the administration tool and again look for the device in your file browser.

Now you can drag and drop files to your USB storage device like any other storage device on your system. Access to the attached USB storage device is not password protected.

NAS Administration Reference

The web-browser-based administration tool provides full access to all configuration settings for the product when used as a NAS device. This section of the manual provides a description for the settings within each of the following main areas:

- Setting up read/write access by User and by Group
- Setting up File Servers, Print Servers, and Shares
- System settings, such as IP Address and Date and Time
- Enabling services such as DHCP, Apple Bonjour, and Media Server
- Maintenance features, such as hard disk formatting and firmware updating
- Enabling data logging features

The menu system of the administration tool is summarized in the following outline:

- **BASIC**
  - **Quick Setup**
    - Wizard
    - Add User
    - Add Group
    - Add Share
- **ADVANCED**
  - **Users and Groups**
    - User Management
    - Group Management
  - **File and Print**
    - File Server
    - Share Management
    - Print Server
  - **System**
    - LAN Settings
    - Time Settings
    - Turn Off Server
    - Information
    - Disk Usage
    - Error Notification
  - **Network Service**
    - DHCP Server
    - Bonjour
    - TorrentFlux
    - Media Server
  - **Maintenance**
    - Disk Utility
    - Firmware Upgrade
    - Save Configuration
    - Restore Configuration
    - Factory Reset
    - Install New Service
  - **Log File**
    - Samba Log
    - FTP Log
    - DHCP Server Log
    - System Log
    - Administration Log
- **ADMIN ACCOUNT**
  - **Admin Account**
    - Account
- **LOGOUT**

Because the Basic / Quick Setup functions (Wizard, Add User, Add Group, and Add Share) have been described previously under “Basic Settings for Initial Setup”, we begin this reference section with a description of the Advanced group of functions.

Users and Groups

This group of settings provides an alternate way to create a new user account or new group, and also provides a method to modify properties of existing user accounts or groups.

User Management

Enter the main screen of User Management by selecting Advanced / Users and Groups / User Management. Here you are presented entry fields for User Name and Password. If you want to create a new user account, fill in these fields directly. The User Name must be lower-case and may be a maximum of 20 alphanumeric characters, without spaces. The User Name must begin with an alphabetic character. See further information about User Name, Description, and the “Create Private Folder” check box under by referring back to Step 9 of “Basic Setup for Initial Settings”.

If you want to edit an existing user account, select a user from the Existing User box, and the User Name and Password fields will fill in automatically.
After completing this form, press **Save** to save the changes you have made for this user.

If you want to delete an existing user, first highlight that user’s name in the Existing User box, and then press the **Delete User** button.

If you want to edit the group assignment properties of a current user, first highlight that user’s name in the Existing User box, and then press the **Groups** button. If you have created a new user account and want to assign this user to one or more existing groups, then after pressing **Save** as described above, press the **Groups** button to proceed to the next screen.

The Groups screen presents a list of the selected user’s assigned groups in the box on

the left. The list of groups in the right box includes groups for which the user is not a member. By selecting group names and pressing either the **Add** or **Remove** button you can reassign the user to various existing groups. When done with your assignments, press **Save** to save your changes.

Note that if you are using the User Management dialogue to create a new user, there may be other properties that you want to set for this user. For example, after creating a new user through Advanced / User Management, share access for that user can be set by leaving User Management and going to File and Print / Share Management. This dialogue is explained later in this reference section.

Group Management

As explained earlier, a group is a collection of user accounts. When you assign access privileges to a new share you have the option of making assignments for an entire group of users at once by referring to the group's name. Enter the main screen of Group Management by selecting Advanced / Users and Groups / Group Management. Here you are presented an entry field for Group Name. If you want to create a new group, fill in this field directly. The Group Name must be lower-case and may be a maximum of 20 alphanumeric characters, without spaces. The Group Name must begin with an alphabetic character.
If you want to edit an existing group, select a group from the Existing Groups box, and the Group Name field will fill in automatically.

After completing this form, press **Save** to save the changes you have made for this group.

If you want to delete an existing group, first highlight that group's name in the Existing Groups box, and then press the **Delete Group** button.

If you want to edit the member list of a current group, first highlight that group's name in the Existing Groups box, and then press the **Members** button. If you have created a new group and want to assign one or more existing users to this group, then after pressing **Save** as described above, press the **Members** button to proceed to the next screen.

The Members screen presents a list of the selected group's assigned members in the box on the left. The users listed in the right box are not currently members of the group. By selecting user names and pressing either the **Add** or **Remove** button you can reassign various users to the group. When done with your assignments, press **Save** to save your changes.

Note that if you are using the Group Management dialogue to create a new group, there may be other properties that you want to set for this group. For example, after creating a new group through Advanced / Group Management, share access for that group can be set by leaving Group Management and going to File and Print / Share Management. This dialogue is explained later in this reference section.

File and Print

This group of settings allows for naming the Windows Workgroup, enabling certain server protocols (such as FTP, NFS, and print server), as well as providing full control over the creation and management of folders (shares) on the drive.

File Server

Enter the main screen of File Server Setting by selecting Advanced / File and Print / File Server. This screen presents options for Windows Workgroup and Windows Internet Naming Service (WINS), for enabling File Transfer Protocol (FTP), and Network File System (NFS) server.

Each subgroup of settings is described below. After completing the form you must press **Save** to save your changes.

Windows Setting

With these settings you can enable or disable the NETBEUI transport protocol, which is required for SMB/CIFS file sharing in Windows. For example, for shared folders to be visible in "My Network Places", this protocol needs to be running. It is enabled by default.

When Windows Setting is enabled, you can modify the Windows Workgroup name and

description. If a WINS server is available, you may optionally fill in its IP address.

FTP Server Setting

You can enable or disable the FTP server support. If enabled, you can enter the port number you will use for FTP (default is port 21).

Once FTP is enabled, you can remotely login to the NAS drive via FTP using your username and password. You will then have FTP access to those folders for which you have access privileges.

If you login to FTP anonymously and Guest Access is enabled (see below) you will access the guest-share folder.

In order to reach the FTP server through the WAN, a public IP address should be assigned to the NAS, or alternatively you can configure a Network Address Translation (NAT) router to map a public IP address to the NAS drive's private IP address on the LAN.

NFS Server Setting

The Network File System (NFS) was developed to allow computers to mount a disk volume on a remote computer as if it were on a local hard drive. You can enable or disable NFS Server support.

If you have only Windows PCs on your home network and have no pressing reason to use NFS support to share files, then you can normally leave this box unchecked in order to free up system resources for other servers.

NFS and Samba perform similar functions for file sharing. The main difference is that Windows PCs have Samba-compatible clients and servers as part of their default network support. Conversely, UNIX systems usually come with NFS by default, with Samba being used to provide file sharing with Windows PCs.

Note that the NAS drive has Samba enabled at all times.

Guest Access Setting

When Guess Access is enabled, anyone on the LAN can access the “guest-share” folder, even if they have not set up a user account. Here you can also optionally set a storage quota (in megabytes), provided that the disk has not been formatted to FAT32, which does not support the quota function.

Also, when Guest Access is enabled, you can access the guest-share folder via FTP by logging into FTP anonymously. When Guess Access is disabled, anonymous FTP is not permitted.

Guest Access is enabled by default.

Share Management

Enter the main screen of Share Management by selecting Advanced / File and Print / Share Management. Here you are presented entry fields for Share Name and Share Path. If you want to create a new share, fill in these fields directly. The Share Name must be lower-case and may be a maximum of 20 alphanumeric characters, without spaces. The Share Name must begin with an alphabetic character.

A description of this share may optionally be entered in the field provided.
If you want to edit an existing share, select a share from the Existing Shares box, and the Share Name, Path, and Description fields will fill in automatically.

After completing this form, press **Save** to save the changes you have made for this share.

If you want to delete an existing share, first highlight that share name in the Existing Shares box, and then press the **Delete Share** button.

Once you have highlighted an existing share, or have created and saved a new share, you will want to assign access privileges for that share. Access is defined separately for SMB/CIFS access than it is for NFS access.

To assign SMB/CIFS access privileges for current share, press the **Windows, FTP Access**

button. To assign NFS access privileges, press the **NFS Access** button.

Using the screen for SMB/CIFS Access (Windows, FTP Access) you can assign read-write access for all users and groups by checking the box marked “Allow for all”. Alternatively, you can assign no access, read-only access, or read-write access privileges individually for each user and group. When done with this form, press **Save** to save your changes.

Using the screen for NFS Access you can assign read-write access for all users and groups by checking the box marked “Allow for all”. Alternatively, you can assign access to individual computers by entering the client computer’s IP addresses or a subnet range. When done with this form, press **Save** to save your changes.

Printer Server

Enter this screen by selecting Advanced / File and Print / Printer Server. Here you may enable or disable the print server function. It is enabled as the factory default. If a printer is attached to one of the USB-A ports as described previously under “Attaching a Printer”, its name will be shown on this screen. You may optionally fill in a description for your printer. When done with this form, press **Save** to save your changes.

System

The System group of settings provides control for IP addressing, date and time settings, control of error notification services, and also displays basic information about the product and its disk usage.

LAN Settings

Enter this screen by selecting Advanced / System / LAN Settings. The top entry field shows the current hostname (factory default is “verbatimnas”). To change the hostname, type in a new name.

Next are IP Address settings. You will normally leave these in the factory default condition, which selects “Obtain IP Address automatically” and “Obtain DNS Server

Address automatically". With these selections enabled, the NAS drive will act as a DHCP client and attempt to retrieve its IP Address and its DNS Server Address from the DHCP server active on your LAN.

Under some LAN environments you will need to enter fixed addresses in the form provided.

The bottom of this screen displays the Media Access Control (MAC) address of the product.

When done with this form, press Save to save your settings.

Time Settings

Enter this screen by selecting Advanced / System / Time Settings. You may manually enter the date, time, and time zone, or alternatively select a Network Time Protocol (NTP) server available on your LAN. When done with this form, press Save to save your changes.

The Time of Day Clock uses a battery to keep the clock running even while the NAS drive is powered off.

Turn Off Server

If you have a need to restart or turn off your file server, you may do so using the buttons available through Advanced / System / Turn Off Server. This is a convenient feature if your administration computer is located far away from the NAS drive. Otherwise, you can simply power off the NAS drive to turn off the server.

Information

Basic information about your system, such as the firmware version number and IP address, can be displayed by selecting Advanced / System / Information. There are no user settings on this screen.

Disk Usage

Basic information about your hard disk, such as total and free space, can be displayed by selecting Advanced / System / Disk Usage. If you have a USB storage device connected to one of your USB-A ports as described previously under “Attaching a USB Storage Device”, then you will also see information about this device on the screen.

Error Notification

The NAS drive features a range of features to monitor product status and to report errors. To enable and setup these features, select the screen at Advanced / System / Error Notification. These settings are grouped into four sections, as described below. After completing this form, press **Save** to save your changes.

Monitoring Services

Here you may select which of the following four functions you would like to monitor:

- Disk Usage. A message will be generated when storage use reaches approximately 90% of total capacity.
- Windows File Sharing Server. A message will be generated as a result of an error detected with the Samba protocol.
- FTP Server. A message will be generated as a result of a detected FTP error.
- DHCP Server. A message will be generated as a result of an error detected with the DHCP Server.

Check Interval

Enter how frequently you would like functions to be checked. The options are hourly or daily.

E-mail Notification

NAS drive has the capability to send you an e-mail message containing status information for the functions being monitored. To enable this feature, check the box marked “Enable” and fill in the form provided with the IP address of the mail server that will process your automatic e-mail notices. Also fill in up to five (5) destination mail

addresses for these e-mail notices.

Pop-Up Notification
In addition to e-mail notification, the product has the capability to use the Windows Messenger service to display a pop-up message on your computer screen. To enable this feature, check the box marked “Enable” and fill in the form provided with the hostnames of up to five (5) computers that will receive these pop-up notices. This feature requires that your computer’s Messenger service is enabled and running, and that your network administrator has not blocked the service.
Pop-Up notification is not supported under Vista or Windows 7.

Network Service

The Network Service group of settings provides control over the built-in DHCP server, Bonjour protocol, and Media Server. Additionally, if another service has been installed using the “Install New Service” feature, the menu for this installed service will be shown here.

DHCP Server

Most LAN environments will already have a Dynamic Host Configuration Protocol (DHCP) service running to automatically issue IP addresses for attached devices. For example, your home router equipment will likely provide this service. In the rare case that your equipment does not provide this service, the NAS drive can run its built-in DHCP Server. To access the main screen for DHCP Server enter Advanced / Network Service / DHCP Server.

To enable the DHCP Server, check the box marked “Enable Server”. It is disabled by factory default setting.

A form is provided to optionally control the way addresses will be issued to clients from the NAS drive’s DHCP Server. You may also set the maximum lease duration from the pull-down menu. When done with this form, press **Save** to save your changes.

If your LAN contains some equipment with fixed IP addresses that you would like the server to avoid when issuing new addresses, you can define these static IP addresses and MAC addresses on the screen accessed by pressing the **Static IP** button at the bottom of the page. Be sure and save any changes you would like to make when entering static IP addresses.

After the DHCP Server has been running on your LAN, you can periodically check back to this screen and review the addresses that have been issued. To view the address list, press the **DHCP Lease List** button at the bottom of the page.

Bonjour

Bonjour is Apple's multi-platform, zero-configuration networking solution. Bonjour lets you create an instant network of computers and smart devices just by connecting them to each other.

Bonjour protocol may be enabled or disabled by selecting the screen at Advanced / Network Service / Bonjour. The factory default setting is enabled. Press **Save** to save any change to this screen.

iTunes Server

On this same page you can enable the built-in iTunes Server. Bonjour must be enabled in order to use the iTunes Server. The iTunes Server will allow the client computer to search for and to play music that has been stored on the NAS drive in the /public/music folder. You can use Samba or FTP to copy your music files to this location. You can also use iTunes to download music from the Apple iTunes web site. iTunes is disabled by default.

Media Server

Media Server (provided by TwonkyMedia) enables you to share your music, pictures and videos with compatible client devices attached to your LAN. Media Server (also known as UPnP AV) protocol may be enabled or disabled by selecting the screen at Advanced

/ Network Service / Media Server. The factory default setting is disabled. Press **Save** to save any change to this screen.

Only the administrator can access this menu option.

The ports used by the server include UDP ports 1030, 1900, 9080 and the first free TCP port above 9000.

The server supports the following content formats in accordance with the corresponding DLNA 1.5 media profiles:

- **Audio**: LPCM, MP3, WMA,
- **Images**: JPEG
- **Video**: WMV, MPEG2

The server also supports the following additional formats (listed by file extension):

- **Audio**: M4A, M4B, MP4, 3GP, WAV, OGG, FLAC, AAC, MP2, AC3, MPA, MP1, AIF, ASF
- **Images**: PNG, TIF, TIFF, BMP, GIF
- **Video**: MP1, MPG, SPTS, MP4, AVI, VOB, DivX, 3GP, VDR, MPE, DVR-MS, Xvid, M1V, M4V, MOV, MPV, MKV, FLV, MTS
- **Playlists**: M3U, M3U8, PLS, WPL

Once Media Server has been enabled, an additional button is presented that allows you to link to the TwonkyMedia Server user interface in a new browser window. This user interface gives you full access to all Media Server settings. The menu tree of the user interface is summarized below:

Home / Server Status

Basic Setup
First Steps
Language
Server Name
Navigation Tree

Sharing
Content Locations
Rescan in x minutes
Clients / Security
Internet Radio

Advanced Setup
External applications
Naming
Music Tree
Photo Tree
Video Tree
Network
Miscellaneous

Support
Maintenance
FAQ

For more information about the TwonkyMedia Server, refer to additional documentation on the CD-ROM.

TorrentFlux

TorrentFlux is an open-source implementation of the BitTorrent protocol, originally written by Bram Cohen. This peer-to-peer file transfer protocol is very efficient at transferring large data files.

TorrentFlux protocol may be enabled or disabled by selecting the screen at Advanced / Network Service / TorrentFlux. The factory default setting is disabled. Press **Save** to save any change to this screen.

Only the administrator can access TorrentFlux features.

Warning: Verbatim expressly does not encourage or condone the use of this software for illegal activities, such as downloading and/or sharing copyrighted content. The use of this software for illegal purposes can result in serious legal consequences for those who engage in it.

Note that the destination folder for the torrent file is initially set to /mnt/ide1/public

This protocol requires access to certain ports for proper operation. For this reason, ensure that your router or firewall or ISP does not block port 8080 or the default port range of 49160-49300.

Once TorrentFlux has been enabled an additional button is presented that allows you to link to the TorrentFlux user interface in a new browser window. This user interface provides for full access to the various features and settings for this application. For example, you can

- Enter the path and name of the seed file into the "Open Torrent File" dialogue box. Optionally, you can browse to the torrent file location using the Browse Button.
- Set the maximum bandwidth (kilobytes/s) for download
- Set the maximum bandwidth (kilobytes/s) for upload
- Add a new seed to the system, using the Add Button
- Start a download job, using the Start Button
- Stop a download job, using the Stop Button
- Delete a job, using the Delete Button
- Refresh job status for all jobs, using the Refresh Button

The menu tree of the user interface is summarized below:

Home

Torrent File Information:

Specify Torrent for Upload

Specify URL for the Torrent File

- Search for Torrents
- RSS Torrents
- Drive Space
- Server Stats / Who
- All
- Directory List
- My Directory

Directory

History

My Profile

- Specify user
- Password
- Theme
- Language
- Cookie management

Messages

Admin

- Settings
- Queue
- Search Settings
- Activity
- Links
- RSS
- New User
- Initiate Backup

For further information, refer to the TorrentFlux web site at www.torrentflux.com .

Maintenance

The Maintenance group of settings provides control over disk formatting and status, firmware upgrades, and ways to make global changes to all settings.

Disk Utility

Enter this screen by selecting Advanced / Maintenance / Disk Utility. You will be presented with a table that lists the status of all detected storage devices. The first device listed ("/dev/hda/") will be the main data partition of the NAS hard drive.

If you have another storage device attached to one of the USB-A ports, its status will be displayed on the next row of the table.

From this table you have the option to perform the following actions on a specific storage device using the buttons provided:

File System Format

The hard drive is preformatted at the factory as EXT2. If you want to change the format to EXT3 or FAT32, make your selection from the pull-down menu, and press **Format**.

Caution: Formatting the drive will delete all data from your drive and will reset all settings to factory default. Use extreme care to protect any previously stored data before reformatting your drive.

Note that the FAT32 format does not support user disk quotas. Furthermore, with EXT2 or EXT3, the drive provides these incremental benefits over FAT32:

- Faster data throughput
- Ability to allocate user storage quotas
- Disk encryption is supported

As mentioned previously, you can always use the passwords associated with your user accounts as one way to safeguard your data from others. To provide an additional level of data security you may optionally choose to enable encryption at the time you format your hard drive. To enable data encryption (available for EXT2 or EXT3 only), check the Encrypt box before you initiate formatting. Once the drive has been formatted with encryption enabled, all future data saved on the drive will be encrypted using the 128-bit loop AES algorithm. Please consider carefully before selecting this feature, because

the encryption/unencryption process results in slower performance. Transfer rates for encryption may reach only 20-30% of what you will achieve using an unencrypted drive. The factory default format is un-encrypted.

Regarding auxiliary storage devices attached to either of your USB-A ports, you may find that you need to reformat your attached device to FAT32 using Disk Utility before your device will mount properly using the NAS drive.

Scan

Press the **Scan** button if you would like to scan your disk for errors. This operation can take a very long time to complete.

Unmount

Press the **Unmount** button if you would like to unmount the auxiliary storage device. This button is disabled for the primary hard disk.

Detail

Press the **Detail** button in order to view a detailed status report for your drive.
Also, in case you have made a recent change to a storage device, you can press the **Refresh** button at the bottom of the table to refresh the table with the most current status.

Finally, the field at the bottom of the Disk Utility screen allows you to set an automatic spin-down time for the hard drive. By spinning down the drive when not in use, you can conserve power, extend the life of the drive, and lower the standby operating temperature (which in turn prevents the cooling fan from running needlessly). The default setting is 30 minutes. Press **Save** to save your change.

Firmware Upgrade

If a more recent version of the NAS drive's internal firmware is available, you will want to download and install it. The most recent firmware version may have improved performance or added features that could give you benefits not present in your current version.

Enter this screen by selecting Advanced / Maintenance / Firmware Upgrade. Make a note of your current version number, which is displayed at the top of this screen. Then visit Verbatim's Technical Support web site (refer to the Getting Help section later in this manual) to check if a more recent version is available. If so, follow the download instructions provided on the site.

Once the upgrade file is available on your computer, browse to it from the Firmware Upgrade screen, and then press the **Start Upgrade** button.

Save Configuration

After you have completely configured all of the NAS drive's settings, you may want to save the full configuration for future reference. To do this enter the Save Configuration screen by selecting Advanced / Maintenance / Save Configuration, and then press the **Save** button. This action will save a configuration file (named "config.tar") to your specified location.

Restore Configuration

After saving a configuration file as described above, you can later retrieve that file to restore all device settings in a single step. Enter this screen by selecting Advanced / Maintenance / Restore Configuration, and then browse to the saved configuration file and press the **Restore** button.

Factory Reset

You can return all of the NAS drive's settings to their factory default state by selecting Advanced / Maintenance / Factory Reset, and pressing the **Factory Reset** button on this screen.

As described earlier, an alternate way to reset the device to factory settings is to press and hold in the Reset button for more than 5 seconds.

Install New Service

The software for most network services is included in the firmware of the NAS controller.

This means that the application programs are saved in the controller's internal Flash memory. However, some network services and functions can be installed from your PC or from the supplied CD-ROM. This method allows for features to be added in the future, and also allows for a very large application to run from a protected partition of the NAS hard drive even when there is not sufficient space in the internal Flash memory.

One example is the TorrentFlux application, which is an implementation of the BitTorrent protocol. Verbatim has installed the TorrentFlux application onto the hard drive at the factory, so you can find this protocol listed under Advanced / Network Service / TorrentFlux when you power up the NAS drive for the first time. However, if you later decide to uninstall this application, or if you reformat your or hard drive, then you will need to re-install the application again from the included CD-ROM should you want to use TorrentFlux in the future.

To install TorrentFlux, select Advanced / Maintenance / Install New Service and then browse to the location of the TorrentFlux rar file on the CD-ROM. This file's full name may look like this:
torrentflux_1_14_3_2_vrb.rar

Then press "Upload" to install this application to your hard drive. This process will take several minutes to complete.

To run the new application after installation has completed, access the NAS web-based administration tool and navigate to Advanced / Network Service / TorrentFlux and select the button to link to the TorrentFlux user interface.

Log File

The NAS drive has the ability to record event logs for various activities that occur during operation. Here you can control and display the available event logs. Each log can be individually restarted by cleaning past events and starting with a fresh log.

Samba Log

To view the log of events that have occurred during Samba file sharing, select Advanced /

Log File / Samba Log.

FTP Log

To view the log of events that have occurred during FTP file transfers, select Advanced / Log File / FTP Log.

DHCP Server Log

To view the log of events that have been recorded by the NAS drive's DHCP Server, select Advanced / Log File / DHCP Server Log.

System Log

To view the log of events that have recorded by the system monitor, select Advanced / Log File / System Log.

Administration Log

To view the log of events that have been recorded by the administration monitor, select Advanced / Log File / Administration Log.

Account Information

The Admin Account tab provides access to certain information about the user currently logged into the web-based administration tool. Usually this will be the admin user. To view this screen select Personal Info / Admin Account / Account.

The top section provides input fields for changing the password, the administration tool's language setting, and the optional description text.

The bottom section displays current information about disk usage and the current user's shared folders.

When done with this form, press Save to save changes.

Logout

After completing all of the intended changes for your current session with the administra-

tion tool, you can press the Logout button to end your session.

Getting Help

If you are experiencing difficulty installing or using your Verbatim product, please visit the main Technical Support website at www.verbatim.com/support.

Limited Warranty Terms

The Verbatim Americas, LLC warranty obligations for this hardware product are limited to the terms set forth below:

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Version 2, June 1991
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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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RM# 173373A