NAS

WNS54 User's Guide

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Introduction

The NAS Server

Congratulations on the purchase of an NAS Server. The NAS inserts Gigabytes of storage space into your network without the cost, space, and maintenance hassles of a full-fl edged file server. The NAS provides solid data transfer performance for multiple client connections. And you can add as many NAS Servers to your network as you like. Compared to using a standard PC as a File Server, the NAS offers lower cost, easier management, and increased reliability. This NAS also supports wireless function (802.11g), AP and for Client mode

Windows utility software is provided for the NAS Administrator. Also, the Web-based *Administration* interface offers a wide array of management options.

Web-based file system

WEB-based file sharing allows access and downloading of files from any PC on the network, including non-Windows PCs.

Windows users can also use Microsoft networking features to make NAS folders appear as drive letters on their PC.

NAS Features

- Provides Gigabytes of external hard disk space.
- Supports standard USB 2.0 port that can connect to Hard Disk Drives or USB flash Drive (USB key).
- Support NTFS and FAT file format for USB HDD.
- Built-in Printer Server (via USB port) gives your network a fully shareable network printer.

- Provided with a Windows utility program for speedy configuration.
- WEB-based configuration and diagnostic interface is accessible from any PC on the network.
- Can act as a stand-alone DHCP server.
- The LAN Administrator can limit the amount of available disk space available to individual users.
- High performance file system automatically maintains itself to provide file system integrity.
- Additional NAS Servers can be added to the network at any time.
- Provide wireless function (802.11g), AP and Client mode

Package Contents

The following items should be included in the NAS packaging.
If any of these items are damaged or missing, please contact your dealer for replacements.

- NAS
- Quick Installation Guide
- Setup CD
- Ethernet Cable
- Power Adapter
- Antenna

System Requirements

- Windows 95, Windows 98, Windows NT 4.0, XP, 2000 and ME.
- Ethernet Network employing 10BaseT or 100BaseTX.
- TCP/IP protocol.

Disclaimer

We highly recommend that you regularly backup the files on your NAS.

Getting Familiar with your NAS

LEDs

LED	Function
Ready	• ON – Normal operation. • OFF – No power. • Blinking – This LED blinking during startup and shutdown.
Status	• ON – This LED will be On during the Startup self-test; it will turn Off once the self-test is completed. If it stays ON, there is a hardware error. • OFF – Normal operation. • Blinking – During a software upgrade, both the Status and Ready LEDs will blink.
Disk	• OFF - Idle. • Blinking – Hard disk is being accessed.
Disk Full	• ON - Disk is completely full. No more data can be stored on this disk • OFF -Normal operation, disk is not full. • Blinking - Disk is 98% full (The Buzzer will also beep 3 times.)
USB	• ON - USB device connected to the USB port • OFF - No USB device installed • Fast Blinking - Data being transferred to or from the USB device • Slow Blinking – USB device can be removed safely

Ethernet	• ON – Link established. • OFF – No LAN connection. • Blinking – Data is transmitted or received via the LAN.
Wireless	• ON – Wireless function enable. • OFF – Wireless function disable.

Rear Panel

Read Panel

Power Input	Connect the supplied power adapter here.
Reset Button (IP/Password)	This button has 2 functions: • If the NAS's IP Address is lost, press and hold this button for 2 seconds. The IP Address will be set to the default value of 192.168.0.100 (Network Mask

	of 255.255.255.0) and it will beep once to indicate the reset has occurred • If the NAS administrator's password is lost, press and hold this button for 10 seconds. The password will then be cleared (no password), and the NAS will beep again.
USB Port	• Connect your USB Hard Disk Drive or USB Flash Drive here. The USB HDD support FAT and NTFS file format • Connect USB printer
USB Eject Button	Press and release to prepare the USB device for removal. When the USB LED starts blinking slowly, it is safe to remove the USB device.
LAN connector	Use this to connect the NAS to your 10BaseT or 100BaseT hub.
Power Switch	This is a spring-loaded "Soft Switch". If power is Off, press once to turn On. If power is On, press once to start the Shutdown sequence. During Shutdown, the *Ready* LED will blink. When Shutdown is completed, all LEDs will turn off.

Audible Warnings

Audible warnings are given by the following signals.

1 Beep	Reset button or power switch is pressed or system is ready to use
2 Beeps Repeated every 5 seconds for 1 minute.	NAS is a DHCP client, but no DHCP Server responded to the DHCP client request. This means that the NAS could not obtain a valid IP address.

3 Beeps Repeated every 5 seconds for 3 minute.	Hard disk usage exceeds 98%

Basic Installation & Setup

The following section instructs you on how to physically connect the NAS to the network, and how to configure the NAS for basic operation in your Windows environment. Everything you need to do to get your NAS up and running is covered here.

Installation

Requirements

- Windows 95, 98, ME, NT 4.0, 2000 or XP.
- Ethernet Network employing 10BaseT or 100BaseTX.
- TCP/IP protocol.

Procedure

Installation

1. Connect the network cable to the NAS.
   Connect the network cable to the **LAN** port on the rear of the NAS. Connect the other end to your hub or switch.
2. Connect the USB device to USB port
3. Connect the supplied power adapter to a power outlet and plug the power cord into the NAS's **Power** input on the rear panel.

4. Power on.
   Locate the NAS's power switch on the NAS's rear panel. Press it once to power on the NAS.
5. The NAS's self-test.
   The NAS will run a brief self-test (2 or 3 seconds). During the self-test, all of the NAS's LEDs will be illuminated or flashing.
6. Booting up.
   When the self-test is complete, boot up will start. The *Ready* LED will blink continuously, and the *LAN* LED will blink occasionally. Boot up should take approximately 1-3 minutes.
7. Boot up completed.
   When the *Ready* LED stops blinking, and remains on, boot up is complete. If the *Status* (Orange) LED stays on, or if the NAS repeatedly beeps, there is a hardware problem. Consult the Troubleshooting section of this User Guide for possible solutions

Shutdown

To shutdown the NAS, press the power switch to start the shutdown sequence. Wait for all LEDs to turn off.

USB Devices

You can insert either USB HDD or USB Memory Disk (Flash Memory Disk) to USB port at any time. Once the “USB” LED on the front panel comes on and stays on, the USB device is available for use. For USB HDD, the NAS can recognize FAT and NTFS file format.

Removing a USB device - Method A

1. Press the USB Eject button on the rear panel. The NAS will beep.
2. Wait for the "USB" LED to start blinking slowly.
3. Remove the USB device.

Removing a USB device - Method B

1. Run the Windows utility
2. Select "Safely Remove Drive"
3. Select the desired NAS
4. Click the "Eject" button.
5. Wait for the "USB" LED to start blinking slowly. (The Windows program will also display a message when it is safe to physically detach the USB device.)
6. Remove the USB device.

Note: If the USB device is not removed, it will not be re-connected. You must remove and re-insert the USB device to have it re-connected.

To share a printer, connect USB printer to this USB port.

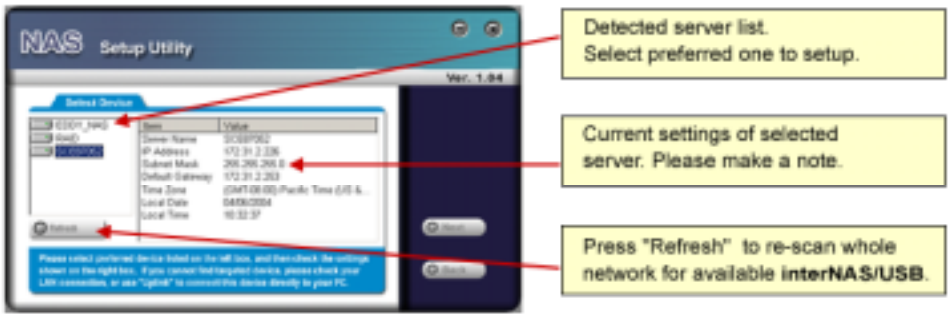
Configuring Your NAS

Now that everything is connected and powered on, you are ready to configure your NAS so that it is accessible to the users on your network.

- This procedure only needs to be done ONCE, by the NAS Server's Administrator.
- Other LAN users should follow the *Client PC Setup* procedure described in the following chapter.

Quick Setup with the NAS Wizard

1. Insert the NAS CD into your CD-ROM drive of your computer.
2. If the installation program does not start automatically, run the program **NAS_Setup.exe** in the root (top) folder of your CD-ROM.
3. Click "Setup" to start the Setup Utility. The Utility will begin scanning your network for installed NASs, and a screen like the following will be displayed.



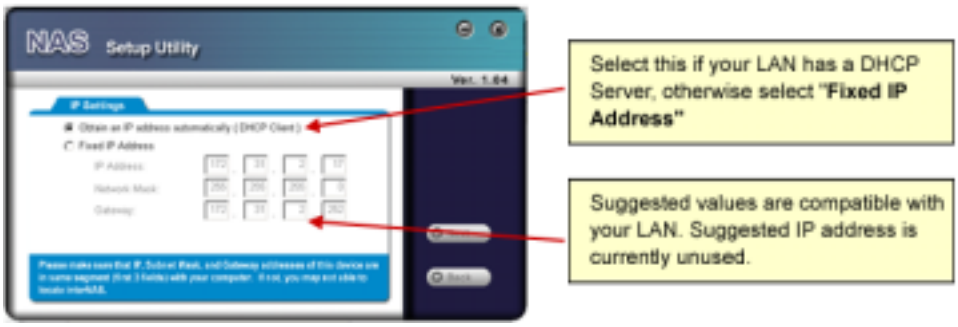
A list of all the NASs on your network will show on the left side. The right side displays details of the currently selected NAS.

If the desired NAS is not listed, check the following:

- The NAS has finished the start up and boot process.
- Your PC and the NAS are on the same LAN segment (there is no Router between your PC and the NAS).

Otherwise, select the desired NAS, and click the "Next" button.

4. The following screen will then be displayed.

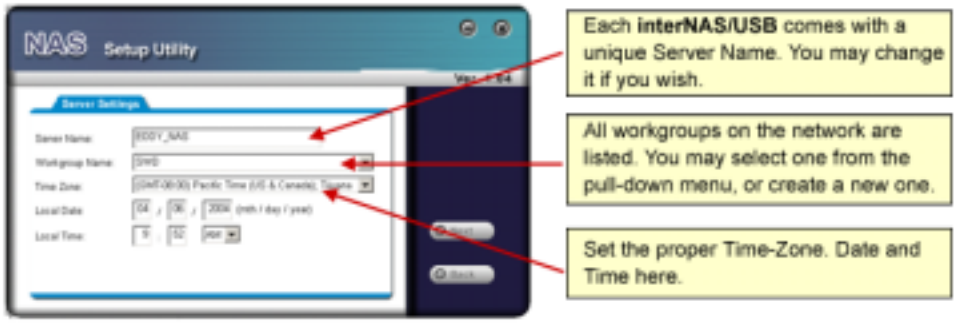


Obtain an IP address automatically (DHCP Client)	Select this only if your LAN has a DHCP Server. Normally, it is better for servers to use a Fixed IP address (see below_

Fixed IP Address This option is recommended. If this option is used, the IP address or the NAS will never change. You need to enter the following data.

- **IP address** - The utility will suggest a unused IP address within the address range used on your LAN. If you wish, you can change this, but you must ensure the address is unused.
- **Network Mask** - This must match the value used by PCs on your LAN.
- **Gateway** - This must match the value used by PCs on your LAN.

5. Click "**Next**" to continue. The following screen will then be displayed:



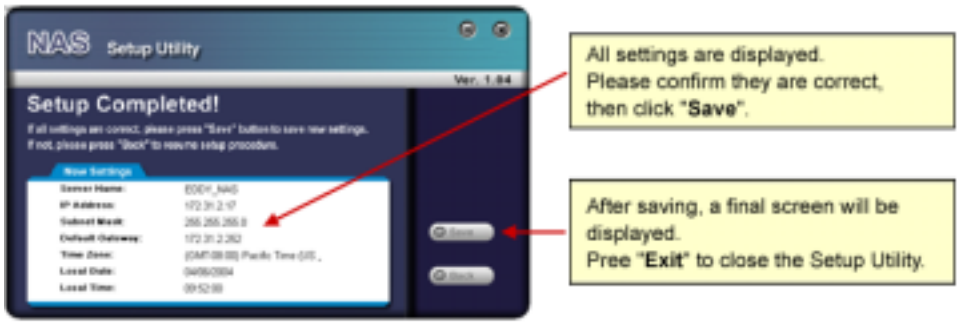
The following data is required.

Server Name: The *Default Name* is shown. Change this if you wish.

Workgroup Name: Normally, this name should match the *Workgroup* name used by PCs on your LAN.

Time Zone	Select your time zone from the list.
Local Date/Time	Enter the local date (mm/dd/yyyy format) and time.

6. Click "Next" to continue. The following screen is displayed.



7. Click "Save" to save your data to the NAS.
   On the resulting screen, click "Exit" to close the Setup Utility.
   The NAS is now operational.

Other Configuration

After the configuration above, all Windows users can access the NAS with "guest" access rights. This allows access to the public shares (by default, **DISK** and **FLASH or USB HDD**).

However, we recommend creating an NAS "User" for each person on your LAN. This will provide each person on your LAN with their own login (name and password) as well as their own personal folder on the NAS.

See the ***Administration*** chapter for details on creating users via the Web-based interface.

Client PC Setup

Overview

Supported versions of Windows are:

- Windows 95/98/ME or later
- Windows NT 4.0, Windows 2000, and Windows XP

The following items need to be checked or configured:

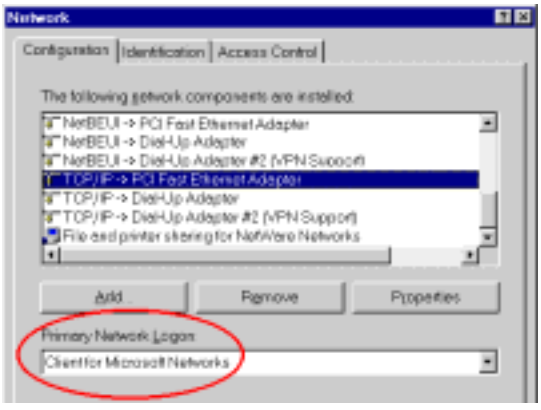
- Network Logon (Windows 95/98/ME only)
- Locating the NAS on your LAN.
- Mapping to the NAS Server's storage.

Network Logon (Windows 95/98/ME only)

If using Windows 95, Windows 98, or Windows ME, you must Logon to the Network correctly in order to use the NAS.

To check your Network Logon, following this procedure:

1. Check your Window logon using *Start - Settings - Control Panel - Network.*
   Ensure the *Primary Network Logon* is set to "Client for Microsoft Networks", as shown below.



Window Logon

2. Windows will prompt you to Logon to the Network when it starts (boots).

You must logon !

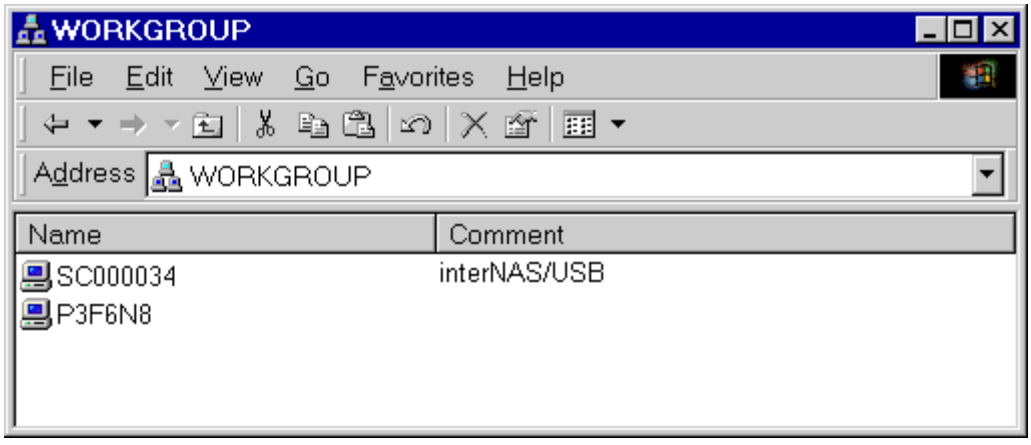
If you press ESC, or click *Cancel*, no network resources will be available.

When you logon, you need to use a valid *User Name* and *Password*. If the NAS Administrator has defined users on the NAS, use the *User Name* and password they supply.

Using the NAS Server's Storage

To use the NAS Server's storage, you should "Map" a drive letter to each folder on the NAS folder which you wish to access. The "Network Drive" will then be available to all Windows programs. The procedure is as follows:

1. Open Network Neighborhood (or My Network Places).
2. On the "View" menu, select *Details*. The *Comment* column will now be visible.
3. Locate the NAS, as shown below.
   If it is not listed, double-click *Entire Network*. Then double-click the Workgroup that the NAS is in. (By default, the NAS is in *Workgroup*.)



Network Browse

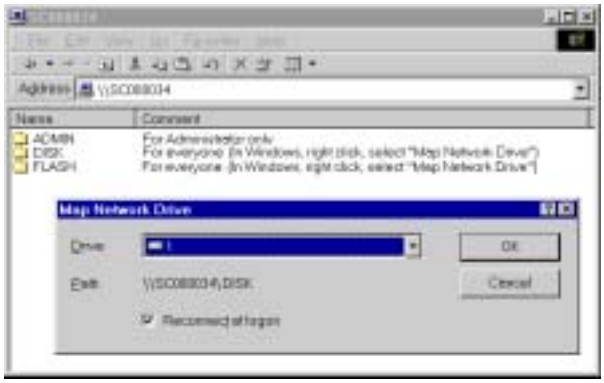
4. Double click on the NAS icon. You will then see a list of shares (shared folders). You can read and write files to these shares, unless the NAS administrator has blocked access.

5. To create a shortcut to an NAS folder, drag its icon to the desktop, and accept Windows offer to create a shortcut.

Mapping a Network Drive

You can give a share (shared folder) on the NAS a drive letter on your PC, such as "F:"
This is called "mapping" the drive letter. To do this, follow this procedure:

1. Right-click on the desired share on the NAS.
2. On the pop-up menu, select "Map Network Drive..."



Map Network Drive

3. Select a drive letter for this folder, check the *Reconnect at Logon* checkbox, then click "OK".
4. This drive will now be available in *Windows Explorer*, and from the *File- Open* or *File-Save As* dialog in all Windows applications.

Notes:

When you try to access a folder, you may be prompted for a password, as shown below:

Network Resource Password Dialog

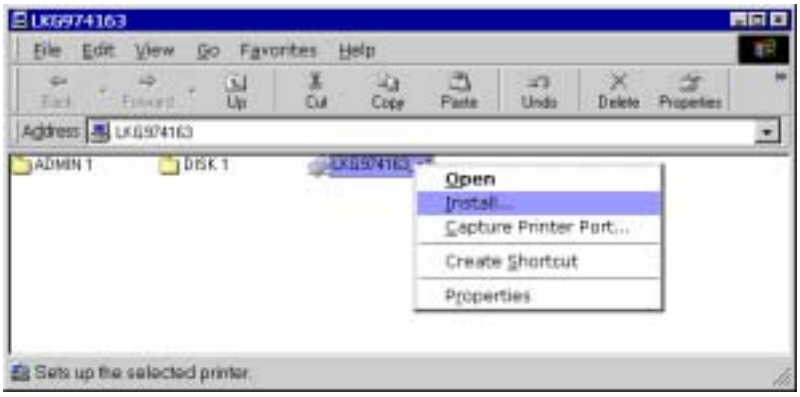
- If your Windows logon name is the same as your *user name* on the NAS, but the passwords are different, you can enter your NAS password here.
- But if your Windows **logon name does not exist** on the NAS, you will have only *guest* access rights, and **there is no password** which you can enter in this dialog. You must ask the NAS administrator to create a username and password for you on the NAS.
- Even if your username and password are correct, you can't gain access if the NAS administrator has not allowed access.

Tips for Storing Data on the NAS

- Change your Windows logon so it matches the user name & password assigned to you on the NAS. This will allow you to login only once.
- You can "map" multiple folders to drive letters on your PC, as described above.
- You can backup your data to the NAS by copying files from your PC to the NAS.
- If you have Windows ME, 2000, or XP, there is a backup program supplied with Windows. You can use this backup program to automate the process of backing up your data to the NAS. Please read the instructions and help file supplied with this program for details of correct usage.

Using the NAS Server's Printer

1. Find out what printer is connected to the printer port on the NAS.
2. Use *Network Neighborhood* (or *My Network Places*) to locate the NAS, as shown in Network Browse earlier.
3. Double-click the NAS icon. A printer icon should be shown.



Install Printer

4. Right-click the printer icon, and select *Install*, as shown above. The *Add Printer* wizard will start.
5. Select the *Manufacturer* and *Printer* matching the printer connected to the NAS.
6. Follow the prompts to complete the installation.
   If prompted about sharing this printer, do NOT enable sharing.
7. The new printer will then appear in your Printer list, and can be used from any Windows application.
   - Use *Start* - *Settings* - *Printers* to list all your printers.

- Double-click the printer to view or delete the documents in the print queue.
- Use *File - Set as Default* to make the selected printer the default printer.
- Use *File - Properties* to view or modify the properties of the selected printer.

Using the Web File Sharing

You can access and download files on the NAS using your Web Browser, even from non-Windows platforms.

To access data stored on the NAS using your Web Browser:

1. Start your WEB browser.
2. In the Address box, enter "HTTP://" and the NAS Server's IP Address. If using the default IP address:

   ```
   HTTP://192.168.0.100
   ```

   Note: If the port number used by the NAS has been changed (on the ***System*** screen) from the default (80), you must specify the correct port number when you connect.
   For example, if the current port is 8080:

   ```
   HTTP://192.168.0.100:8080
   ```

3. The following screen will be displayed.

NAS Home Page

4. To browse the files and folders on the NAS, click **DISK (Public data)** or **FLASH/USB HDD** on the home screen above.
   - Shares (Folders) to which everyone has access are listed. You can access these folders, and files by clicking on the folder name or filename.
   - If your Browser displays the file when you prefer it to be downloaded, right-click on the file and choose "Save Target as…"

5. To access data which is password-protected, click the ***User Login*** link.
   - You will then be prompted for your user name and password.
     Enter the user name and password assigned to you by the Administrator of the NAS.
   - The screen will then update, and list all Shares (folders) to which you have access.
6. You can now navigate through these folders by clicking on the folder name, and download any file by right-clicking in and choosing "Save Target as …".

Changing your Password

Although the Administrator of the NAS must create your User Name and initial password, you can then change your own password whenever you wish, as follows:

1. Start your WEB browser.
2. In the *Address* or *Location* box, enter "HTTP://" and the NAS Server's IP Address. If using the default IP address:

   `HTTP://192.168.0.100`

   Note: If the port number used by the NAS has been changed (on the ***System*** screen) from the default (80), you must specify the correct port number when you connect.
   For example, if the current port is 8080:

   `HTTP://192.168.0.100:8080`

3. The following screen will be displayed.

NAS Home Page

4. To change your password, click on the "Change Password" link.
   The following screen will be displayed.

Change User Password

5. Enter the required data:
   - **User name** - your login name on the NAS, created by the NAS Server's administrator.
   - **Existing password** - your current password
   - **New password** - the password you now wish to use.
   - **Confirm new password** - reenter the new value to ensure it is correct.
6. Click "Save" to save your changes.
7. Click "Home" to return to the main screen.

Administration

Overview

This Chapter describes using the Web-based Administration interface.

For details on using the Windows utility, see the ***Basic Installation & Setup*** Chapter.

The Web-based Administrative Interface

To establish a connection from your PC to the NAS Server:

1. Start your WEB browser.
2. In the Address box, enter "HTTP://" and the NAS Server's IP Address. If using the default IP address:

   ```
   HTTP:// 192.168.0.100
   ```

   Note: If the port number used by the NAS has been changed (on the ***System*** screen) from the default (80), you must specify the correct port number when you connect.
   For example, if the current port is 8080:

   ```
   HTTP://192.168.0.100:8080
   ```

3. Once connected, the following screen is displayed.

NAS Home Page

4. To access the *Administration* interface, click on the "Administration" link on the right. You will then be prompted for a password, as shown below.

Password Dialog

5. Enter `admin` for the name, and leave the password blank.
   - To gain access, you must enter the User Name and Password of a user in the "Administrators" User Group.
   - By default, the only user in the "Administrators" User Group is "admin". (You can add other users as you wish.)
   - The default password for the "admin" user is blank (no password).
     This should be changed. Click the *User Password* link on the Home Page to change the password.
6. The "**Users**" screen will be displayed, as described in the following section.
   Use the menu tabs to select the other screens as desired.

Users Screen

This is the first screen that appears after selecting "Administration". This screen allows you to manage the Users which exist on the NAS Server.

- The "guest," and "admin" users are pre-defined, and cannot be deleted.
- Users can be members of many user Groups.
- When a user is created, a Share (folder) is created for them, with the same name. Only the user and the Administrator group can access this new Share.

Users Screen

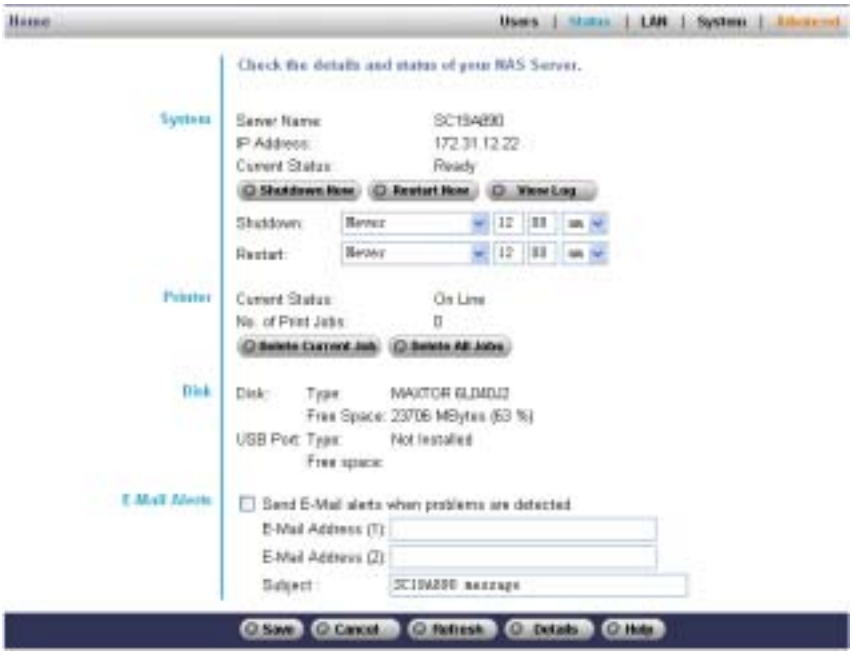
Existing Users	
Users List	This list shows all existing users. As you scroll through the list of users, details of the selected user are displayed in the "Properties" area.
Properties	
Name	User Name. Note that punctuation and other special characters (e.g. * / | \ ) cannot be used in the name.
Comment	Enter a comment if you wish.
Verify Password	Enter the user's password in these fields. 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.
Create Private Folder (Share)	If creating a new user: • Checking this option will create a Group and a Private Folder (Share) with the same name as the user. • The "Private Folder (Share) Location" field allows you to choose which disk is used for the Private Folder. • Read/Write access will be granted to the Share.

	If changing an existing user: • The checkbox has no effect - it will neither create nor delete. This option is only available when creating a new user. • However, you can move the user's private folder to another disk (if installed) by changing the location, and saving the change.
Enable disk Quota	Enable the checkbox to set the disk usage for the user, then enter the maximum amount of disk space this user is allowed to use. **Note**! Unless the checkbox is checked, the Disk Quota field has no effect.
Buttons	
Groups	Click this to view and/or modify the Groups which the selected user is in.
Delete	Click this button to delete the selected user. **Warning! When a user is deleted, their Private Folder, and any data it contains, is deleted.** If this data is important, the Administrator should copy it to another folder before deleting the user.
Save as New User	Use this Button to create a new user, after entering their data in the "User Properties" fields.
Clear Form	Use this button to clear the form, preparing the form for the entry of a new user.
Save	Use this Button to save any changes you have made to the "User 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 "User Properties" fields.
- Edit the "User Properties" fields as required. Note that you cannot change the "Create matching Share and Folder" option when modifying a user. However, you can use "Share (Private Folder) Location" field to change to location of a user's Private Folder, if it already exists.
- Click the "Save" button to save your changes.

Status Screen



Status Screen

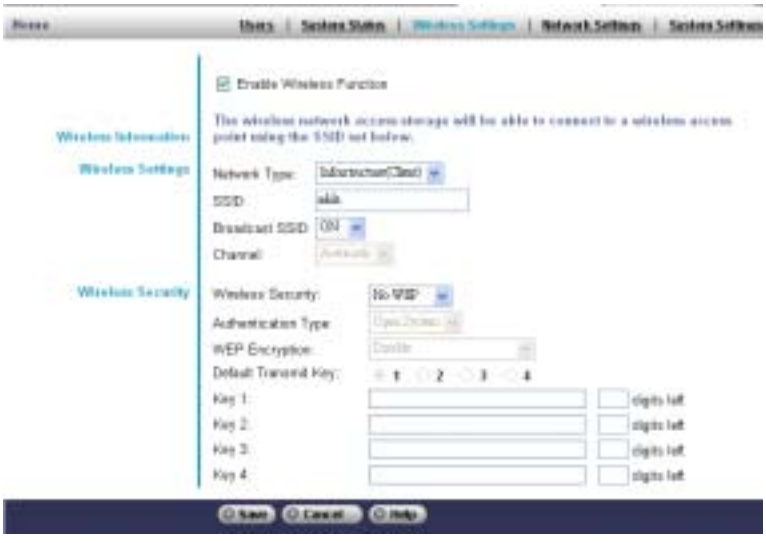
System	
System Name	The current name. This name will be shown in "Network Neighborhood" or "My Network Places"

IP Address	IP Address currently used by the NAS Server.
Current Status	Indicates the current status of the Server. This will usually state "Available" or “Ready” If the Server is not available, the message will say why the Server is not available (e.g. Scandisk in Progress)
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	
Send..	Check this to enable the sending of E-Mail alerts by the NAS Server. Alerts will be sent when there is some problem requiring the Administrator's attention.
E-Mail Address	Enter the E-Mail Addresses. The messages generated by the NAS Server will be sent to this destination.
Subject	Enter the text you wish to appear in the "Subject" field of E-Mail generated by the NAS Server.

Buttons	
Shutdown Now	Shutdown the Server immediately. This will break all existing connections, including this one. Clicking this button does NOT save any data you have entered.
Restart Now	Restart (reboot) the Server. This will break all existing connections, including this one. The NAS Server will immediately restart, but could take a few minutes before it is available again. Clicking this button does NOT save any data you have entered.
View Log	Click this button to view the log file in separate window. The log file is a record of activity on the NAS Server, which can help in management and troubleshooting.
Delete Current Job	Clicking this button will delete the Print Job currently being printed. Use this if the document is not printing correctly.
Delete All Jobs	Clicking this button will delete all Print Jobs in the Print Queue. Use this to clear the Print Queue.
Refresh	Click this to update the data shown on screen.
Details	Clicking this button will open a new window, displaying further status details, including a list of all PCs and other devices which have been allocated an IP address by the DHCP Server function (if enabled).

Wireless Screen

This screen allows you to set the wireless function.



Wireless Function	
Enable Wireless Function	Can use it to disable/enable Wireless Function.

Wireless Settings	
Network Type	Select Infrastructure mode if you are connecting the server to a network Access Point. Choose Access Point mode if the server will acts as one Access Point.
SSID	The network name is a value that identifies a collection of wireless devices found in a particular network. The default value for the Wireless Broadband Router is "wireless". All workstations and access points must use the same SSID to be able to communicate with one another. The SSID is a 32-character field, and the value is case sensitive. For example, your street address or some other identifier of the physical location of the WLAN, your name, your company name, or the company name and department, a favorite slogan or saying, etc.
Broadcast SSID	This option only works in Access Point mode. If checked, the server will broadcast its SSID in the wireless network, and not if unchecked.
Channel No	Select the appropriate channel from the list provided to correspond with your network settings, between 1 and 11 (in North America). All devices in your wireless network must use the same channel in order to function correctly.
Wireless Security	
WEP	If you wish to enable WEP encryption, select WEP in the **Wireless Security** list.

WPA	If you wish to enable WPA encryption, select WPA in the **Wireless Security** list.
WEP	
WEP	An acronym for Wired Equivalent Privacy, WEP is an encryption method used to protect your wireless data communications. WEP uses 64-bit or 128-bit keys to provide access control to your network and encryption security for every data transmission. To decode a data transmission, each device in a network must use an identical WEP key. Higher encryption levels offer higher levels of security, but due to the complexity of the encryption, they may decrease network performance.
Authentication	The default is set to **Open System,** in which the sender and the recipient do NOT use a WEP key for authentication. **Shared Key** is when the sender and recipient use a WEP key for authentication. To disable WEP encryption, keep the default setting, **Disable**.
WEP Encryption	An acronym for Wired Equivalent Privacy, WEP is an encryption method used to protect your wireless data communications. WEP uses 64-bit or 128-bit keys to provide access control to your network and encryption security for every data transmission. To decode a data transmission, each device in a network must use an identical WEP key. Select the level of WEP encryption you wish to use, **64-bit** or **128-bit**. Higher encryption levels offer higher levels of security, but due to the complexity of the encryption, they may decrease network performance.

Default Transmit Key	Select which WEP key (1-4) will be used when the Access Point sends data. Make sure the receiver is using the same key.
Key 1 ~ Key 4	WEP keys enable you to create an encryption scheme for wireless LAN transmissions. Manually enter a set of values. (Do not leave a key field blank, and do not enter all zeroes. These are not valid key values.) If you are using 64-bit WEP encryption, then each key must consist of exactly 10 hexadecimal characters in length. If you are using 128-bit WEP encryption, then each key must consist of exactly 26 hexadecimal characters in length. Valid hexadecimal characters are "0"-"9" and "A"-"F".
WPA	
WPA	WPA is an upgrade to the WEP (Wired Equivalent Privacy) standard for securing your wireless network.
Pre-Shared Key	WPA Pre-Shared Key (**PSK**) is a field where the password is entered. All wireless clients must also use this password to gain access to the network. Note that the Key format must also match the setting for the wireless clients. Its length rangs from 8bytes to 63bytes.
Group Rekey Interval	WPA Group Rekey Interval is used to specify the frequency of encryption key rotations. The lower the number, the faster your encryption key will rotate, however, setting this number too low may cause your wireless network to slow down.

Encryption	WPA Encryption has 2 choices: TKIP (Temporal Key Integrity Protocol) - it is the most commonly used encryption method and AES (Advanced Encryption Standard) - it can be used if your wireless clients do not support TKIP.

LAN Screen

This screen allows you to set the IP Address and related information required for TCP/IP networks.

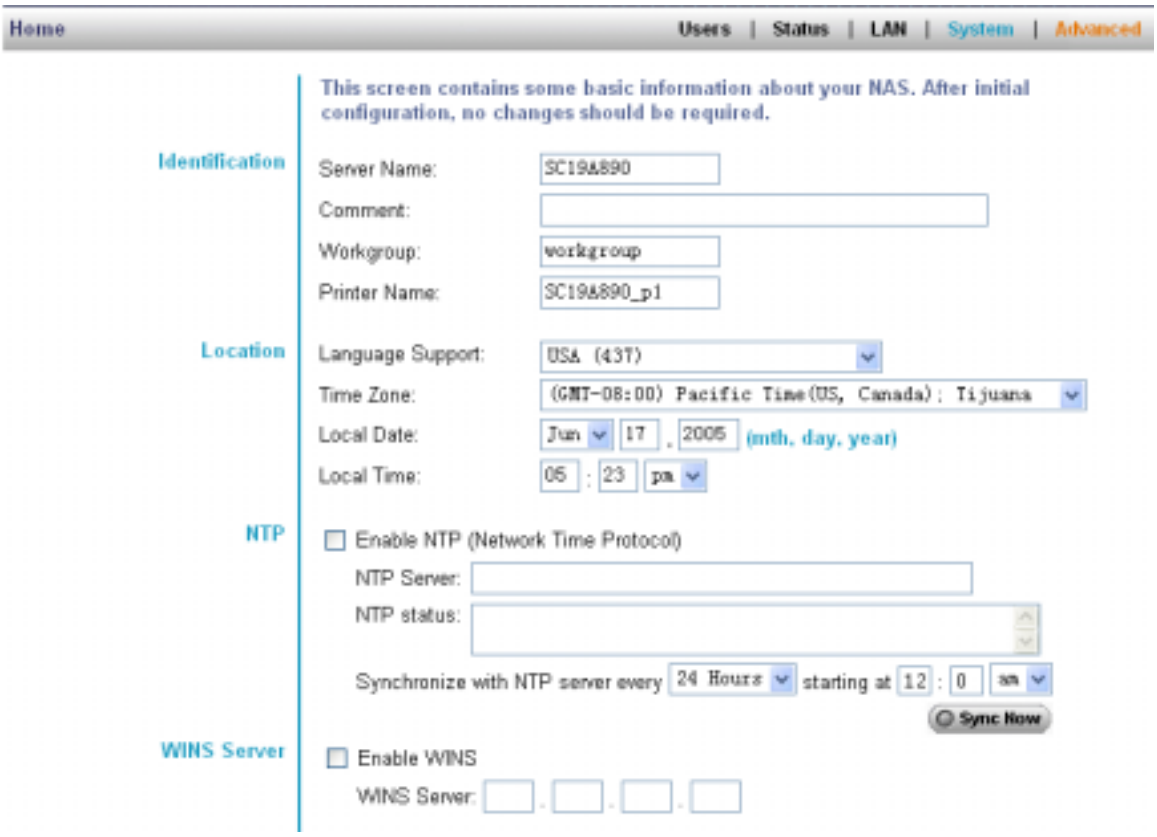
- **Wireless Access Point:**
  If you are using this device as a Wireless Access Point,
  IP Address = The IP Address of the NAS.
  DHCP server = The IP Address range that the NAS will serve out to the client that is wirelessly connected.
  DNS Server = If the NAS is connected to a device that has Internet access, these fields are applicable and will be automatically populated via the Internet device it is connected to.
- **Wireless Client:**
  If you are using this device as a Wireless Client,
  IP Address = The IP Address that the NAS will receive or can be statically assigned to match the network of the Router or Gateway that it is connected to.
  DHCP Server = This function can be used in the event that the NAS is connected to a network that denies full access, in which, accessing only the NAS, is still achievable, if this function is set.
  DNS Server = If the NAS is connected to a device that has Internet access, these fields are applicable and will be automatically populated via the Internet device it is connected to.

LAN (TCP/IP) Screen

IP Address	
Obtain IP Address automatically (DHCP Client)	Do NOT select this unless you have a DHCP Server on your LAN. A DHCP Server can provide an IP Address to PCs and other devices when they boot.
Fixed IP Address	Select this if your LAN does not have a DHCP Server, and enter the following data.

IP Address: (Default:192.168.0.100)	The IP Address must be unused, and compatible with the PCs on your LAN. Usually, this means the first 3 fields should be the same as your PC, and the last field must be an unused number between 1 and 254.
Network Mask: (Default:255.255.255.0)	Enter the same Network Mask (Subnet Mask) used by PCs on your LAN.
Gateway (Router): Default: None	If your LAN has a Router or Gateway, enter its IP Address here. Otherwise, leave this blank.
DHCP Server	
Enable	Use this to Enable/Disable the DHCP Server. If you already have a DHCP Sever, do not enable this feature.
Start Address	Enter the beginning of the range of IP Addresses to be allocated by the DHCP Server. Generally, the first 3 fields of the IP Address must match the NAS Server's IP Address. The 4th field must be between 2 and 250.
Finish Address	Enter the last address of range of IP Addresses to be allocated by the DHCP Server. The first 3 fields must match the corresponding field in the "Start IP Address".
DNS Server	
Primary	IP Address of the first DNS Server.
Backup	IP Address of the DNS Server to be tried if the first server is busy.

System Screen



System Screen

Identification	
Name	If you wish, you can change the name of the NAS Server. Note that punctuation and other special characters (e.g. * / | \ ) cannot be used in the name.
Comment	Enter a comment if you wish (e.g. the location of the NAS Server)
Workgroup	This should match the "Workgroup Name" on your PCs. If the Workgroup name does not match, access to the NAS Server is still possible, but the NAS Server will not appear when you perform a "Browse Network".
Printer Name	Enter the name of the printer. Windows users will see this name when they browse the network.
Location	

Language Support	Select the language used by computers on your LAN. If multiple languages are used, select the most common.
Time Zone	Select the correct time zone for your location.
Local Date	Enter the local date. The NAS Server will set it own calendar according to the date you provide.
Local Time	Enter the local time at your location. The NAS Server will set its own clock according to the time you provide. Remember that this is not sent to the Server until you click "OK".
NTP	
Enable NTP	If enabled, the NAS Server will synchronize its clock with a NTP (Network Time Protocol) Server.
NTP Server	Enter the domain name or IP address of the NTP server you wish to use. The NTP server can be a public server (on the Internet) or a local server (on your own network).
NTP Status	This shows the status of the NTP update procedure.
Synchronize ...	Select how often you want the NAS Server to synchronize its clock with the specified NTP server. You can also specify the time of the next synchronization. This allows you to specify that the synchronization should be performed (for example) at 11.00 pm each day.
Sync Now	Use this button to synchronize with the NTP server immediately.

WINS Server	
Enable WINS	Enable this if your LAN has a WINS Server. If enabled, this device will register with the WINS Server. This will allow users on the LAN to locate this device through a Router. (Without WINS, "Network Neighborhood" or "My Network Places" only scans the local LAN segment.)
WINS Server	If WINS is enabled, enter the IP Address of your WINS Server. Normally, this will be a Windows NT/2000/XP Server.
Options	
Enable Guest Logins	If enabled, then the user can use "guest" as user ID to login to the NAS. If disabled, then "guest" will not be accepted as a login.
Convert failed logins to "guest" logins	If enabled, then all Windows users will be able to access the NAS via Network Neighborhood/My Network Places, with "guest" access rights. By default, the "guest" user has Read/Write permission to the "Disk" folder on the USB HDD, and all folders on the Flash Drive.
Enable FTP Server	If enabled, then it will be possible for users to upload and download files using a FTP client program on their PC.
Allow anonymous FTP login ("guest" right)	The FTP server will prompt for a Username and Password when clients attempt to connect. If this option is Enabled, users will be able to enter "anonymous" as the Username, and any string as the Password. If this option is Disabled, users must provide their correct Name and Password.

Enable UPnP Support	If enabled, the NAS will broadcast its availability. On systems which support UPnP (e.g. Windows ME, XP), an icon for the NAS will be automatically generated.
Port Number..	This port number is used for HTTP (Web Browser) connections to this Server. The default is 80, as used by Web Servers. If this is changed, you should use a number greater than 1024 (8080 is often used). Also, if the port is not 80, you must specify the port in your Web browser, in order to connect. To do this, add a ":" and the port number after the address: e.g. `HTTP://192.168.0.100:8080` This example assumes the NAS IP Address is 192.168.0.100, and the port number is 8080.
Restore Default Config Button	Click this button to restore ALL settings to the factory defaults. Data stored on the Server is not affected.

Advanced Menu

Groups Screen

This screen allows you to manage the User Groups which exist on the NAS Server.

Groups Screen

New Group	Use this area to create a new group.
Existing Groups	This shows the list of all Groups. Two groups - "everyone" and "administrators" - always exist. These groups can not be deleted.
Buttons	
Create	Use this Button to create a new Group. Enter the desired name for the new Group in the "Name" field, then click this button.
Access	Clicking this will display the shares which members of the current Group are able to access. You can then assign, remove or modify access rights for this Group. See below for details. **Note:** The "administrators" Group ALWAYS has Read/Write access to ALL Shares.
Members	Clicking this will display the users who are members of the selected Group. You can then add or delete members. **Note:** The "everyone" Group ALWAYS contains all users. You cannot add or remove members.
Delete	Click this Button to Delete the selected Group. **Note:** The "administrators" and "everyone" Groups can not be deleted.

Access Rights Screen

This screen allows you to view and modify the Groups which can access this Share.

Note: The administrators group ALWAYS has Read/Write (R/W) access to ALL shares.

Groups Access Rights Screen

Data	
Group Name	The name of the Group being modified is shown above the 2 lists of shares.
Accessible Shares	The "Accessible Shares" column on the left shows which Shares this Group can currently access. The type of access is shown in brackets. (R = Read Only, R/W = Read-Write). **Note:** The "administrators" Group has R/W access to ALL shares.

Other Shares	The "Other Shares" column on the right shows all other Shares. The current Group has no access to these Shares.
Operations	
To Add Access Rights	Select the Share or Share in the right-hand column, then click the "<< Read Access" to provide Read-Only access, or the "<< R/W Access" Button to provide Read-Write access. Multiple Shares can be selected by holding down the CTRL Key while selecting.
To Remove Access Rights	Select the Share or Shares in the left-hand column, then click the "No Access >>" Button. Multiple Shares can be selected by holding down the CTRL Key while selecting.

When finished, click the "Close" Button.

Group Members

This screen allows you to check which users are members of the group, and to add or revoke membership of this group.

Note: The "everyone" Group ALWAYS contains all users. You cannot add or remove members.

Group Members Screen

Data	
Group Name	The name of the Group being modified is shown at the top of the screen.
Members (users)	The "Members" column on the left shows the users who are currently members of this Group.

Other Users	The "Other Users" column on the right shows users who are not currently members of this Group.
Buttons	
To Add a Member to the Group	Select the User or Users in the right-hand column, then click the "<<" Button. Multiple Users can be selected by holding down the CTRL Key while selecting.
To Delete a Member from the Group	Select the User or Users in the left-hand column, then click the ">>" Button. Multiple Users can be selected by holding down the CTRL Key while selecting.

When finished, click the "Close" Button.

Shares Screen

This screen allows you to manage the Shares which exist on the NAS Server. A "Share" is a folder (directory) on the NAS Server which a User Group can access.

- Only the NAS Server Administrators can create Shares. However, within a Share, users who have access to that Share can create other folders (directories) as well as files.
- A Share can be accessed by many User Groups, and a User Group can access many Shares.
- If you have a Share within a Share, then all users with access to the outer share will ALWAYS have the same access rights to the inner share.

Shares Screen

Existing Shares	
Share List	All existing shares are listed. When an existing Share is selected in the list of Shares, it details are displayed in the "Share Properties" area.
Properties	
Name	The current name will be displayed. The Share Name can be changed if you wish. This does not change the name of the folder (directory) associated with the Share. Note that punctuation and other special characters (e.g. * / | \ ) cannot be used in the name.
Comment	Change or enter a comment if you wish.
Location	The Location associated with the Share. Note that once a Share is created, its location can not be changed. There are 2 options: • Disk - Select the disk where you want the Share to be created. • Folder - If "Default Folder" is selected, the share is created in the root folder (directory) on the selected disk. If "Specify" is selected, you can enter the folder (directory) to be converted to a Share. If the folder does not exist, it will be created.
Buttons	
Access	Click this Button to view the Groups which have access to the selected Share, and change these access rights as required.
Browse	Use this to view the files and folders in the selected Share. If using Internet Explorer, you will be able to right-click a file and perform standard Explorer operations.

Delete	Click this Button to Delete the selected Share. Deleting a Share does NOT delete its folder or any data. The folder and its data is still accessible by the "administrators" group.
Save as New Share	After entering the required data in the "Share Properties" area, use this Button to create a new Share on the selected disk.
Clear Form	Clear the form, preparing it for the creation of a new Share.
Save	Use this Button change the properties of a Share, as follows: • Select the desired Share in the Share list. Its details will be displayed in the "Share Properties" area. • Change the Share properties as required. Note that you can NOT change the location. • Click the "Save" button to save your changes.

Share Access

The screen is displayed when you click the “Access” button on the ***Shares*** screen. It allows you to determine which users can access the selected share.

Share Access Rights

Data	
Share Name	The name of the Group being modified is shown above the 2 lists of shares.
Groups with Access	This list shows which Group can currently access this Share. The type of access is shown in brackets. (R = Read Only, R/W = Read-Write). **Note:** The "administrators" Group has R/W access to ALL shares.

Other Groups	The "Other Shares" column on the right shows all other Groups. These Groups have no access to the current Share.
Operations	
To Add Access Rights	Select the Group in the right-hand column, then click the "<< Read Access" to provide Read-Only access, or the "<< R/W Access" Button to provide Read-Write access. Multiple Groups can be selected by holding down the CTRL Key while selecting.
To Remove Access Rights	Select the Group in the left-hand column, then click the "No Access >>" Button. Multiple Groups can be selected by holding down the CTRL Key while selecting.

When finished, click the "Close" Button.

Backup Screen

Backup Screen

Config Backup

This facility allows you to Backup (Download) and Restore (Upload) the NAS Server's configuration file. The configuration file contains all network information, as well as the User, Group, and Share information. It does NOT include any information about the files stored on the NAS.

NOTE: Using this feature will overwrite (destroy) any existing configuration information.

Buttons	
Download button	Click this to download the configuration file and save it on your PC.
Upload button	Use this to restore a previously saved configuration file from your PC to the NAS.

Data Backup

Data files can be backed up from the NAS to another network device, or from another network device to the NAS. The Backup Jobs field displays any backup jobs you have defined. If you have not defined any jobs, the field will be empty. For each job defined, the following data in shown:

- Name: This shows the name you assigned to this backup job
- Source & Destination: The name of the source and destination devices are shown in the form Source => Destination
- Date/Time: The data and time of the last backup are shown.

Buttons	
Backup Now	Click this button to run the selected backup job immediately.
Modify	Use this to change the settings of the selected backup job.
Delete	Click this button to delete the selected backup job.
View Log	This is used to view the log of completed backup jobs
Add New Job	This button will open the Define Backup Job screen, where you can define a new backup job.

Define Backup Job

From this screen, you can add new backup jobs, which be displayed on the Backup screen.

Define Backup Job Screen

Follow the guidelines below when adding jobs

Define Backup Job	
Name	The backup job's name must be composed of alphanumeric symbols not exceeding 15 characters in length.
Backup Type	Select the desired backup type: ● **Full**: Backup all files ● **Incremental**: Only backup files as they are change ● **Synchronize**: Backup all files to start, and then any files on the destination that do not exist on the source are deleted.
Direction	Select the desired direction where backing up will occur: ● **From this NAS to another device**: Data on the NAS is backed up to remote device ● **From another device to NAS**: Data on remote device is backed up to the NAS
This NAS	
Share	Select the applicable share. If backing up from the NAS, select the share you wish to back up. If backing up to the NAS, select the share where you want the backup-up data to be stored When the sub-folder field appears, enter the location of the sub-folder where the share will be stored.
Other Device	Enter the details of the remote device where data will be backed up or stored

Name	The name of other device, as seen on the network.
Share Folder	Enter the name of share folder. Depending on the direction of the backup, this is either the share to be backed up, or the destination for the backed-up data
Access the folder requires login	If the share is password protected, enable this checkbox and enter the Login Name and Password required to gain access to the share
Schedule	This show the schedule options for when the backup will occur: ● **Never**: Choosing this selection will disable this backup job ● **Every Day**: Select this to have the backup job performed each day, at the specified time ● **Every Monday, Every Tuesday, …**: Select this to have the backup performed once per week, on the specified day and time ● **The time field (hour, minute, AM/PM)**: Allow to specify at what time the backup job should be performed

Disk Screen

This screen allows you perform various Disk Operations on the USB Disk. (No operations can be performed on a Flash Drive.)

- **Prepare Disk** - use this after installing a new disk. The disk will be partitioned and quick-formatted. **Any data on the disk will be lost!**
- **S.M.A.R.T.**- S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) can warn of impending problems with the Hard Disk, before it actually fails. This test should be performed regularly.
- **Scandisk** - running the Scandisk (Disk Check) program will check the file system, and correct any errors found. This program should be run regularly. The Scandisk program will also run automatically if an error condition is detected, such as an abnormal shutdown due to loss of power.
- **Standby** - Use the "Set Hard Disk to standby mode.. " setting to determine if and when the hard disk drives should be switched to "Standby" mode.

Disk Screen

Prepare Disk	The status field can have any of the following values: • **Not installed** No disk is inserted, or connection or disk has failed. • **Not Prepared** Disk has been detected, but it is not ready for use. Use the "Prepare Disk" button to prepare the disk for use. • **Preparing** This message will only be displayed after you have

	clicked the "Prepare Disk" button. (See below for details of this button.) • **Prepared** Disk is ready for use
Self-test (S.M.A.R.T.)	This can have any of the following values: • **N/A** No disk is available. • **Not Tested** No S.M.A.R.T. check has been performed on this drive. • **Test OK** No errors were found in the last test. • **Errors** The S.M.A.R.T. check found errors on the drive. If this happens a few times, the disk should be replaced.
Scandisk	The status field can have any of the following values: • **N/A** No disk is available. • **No Scan performed** No Scandisk has been performed recently on this drive. • **Scandisk in progress** Scandisk operation is in progress. The disk cannot be used while a Scandisk is in progress. If required, use the "Start/Stop" button to terminate the Scandisk operation and gain access to data on the disks. (To see the results of the Scandisk operation, use the "View Disk Log" button.) • **Scandisk completed** The last Scandisk operation has been completed. You can use the "View Disk Log" button to view the results. • **Scandisk terminated** The last Scandisk operation was cancelled by the Administrator before it was completed.

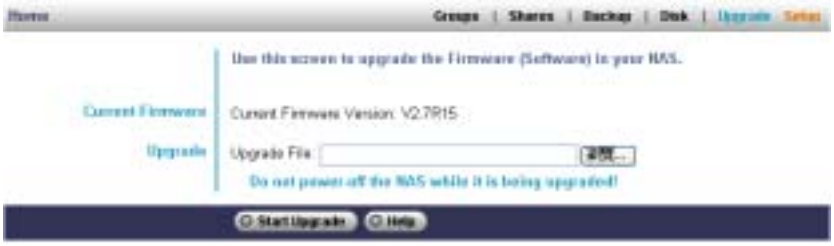
	Run Scandisk - Select the day and time you wish the Scandisk to be done. (Select "Never" if you don't wish the scandisk to run automatically.)
Buttons	
Prepare Disk	Use this button to start preparing the disk. This will partition and quick-format the new disk. **WARNING!** This will destroy any data on the disk. Once started, this process can NOT be halted or reversed.
Self-test (S.M.A.R.T.)	**Run Check** - Select the day and time you wish the S.M.A.R.T. check to be done. (Select "Never" if you don't wish the S.M.A.R.T. check to be performed automatically.) **Test now** - Click this button to run the S.M.A.R.T. check immediately. The check will take no more than a few minutes.
Scandisk	**Start/Stop** - If a Scandisk is in progress, click this button to terminate the Scandisk immediately. Otherwise, clicking the button will start the Scandisk. The Scandisk could take a few hours, and the disk is unavailable to users while the Scandisk is in progress.
Standby	Use the "Set Hard Disk to standby mode.. " setting to determine if and when the hard disk drives should be switched to "Standby" mode.
Save	Save the settings on this screen. This has no effect on any operations in progress.
Cancel	Restore the settings on the screen to their values after the last "Save" operation. Clicking "Cancel" has NO EFFECT on any operations in progress.
Disk Log	Use this to view the results of the last Scandisk operation.

Upgrade Screen

The Upgrade facility allows you to upgrade the NAS Server's software. You need to obtain the upgrade file from your dealer or supplier.

Note that the NAS Server is unavailable during the upgrade process, and all connections will be lost, including the one used to start the upgrade.

The NAS Server will reboot once the upgrade installation is completed. The procedure may take from 5 to 10 minutes.



Upgrade Screen

Current Firmware	The version number of the NAS Server's current firmware.
Upgrade	Enter the full path (e.g. C:\downloads\utilities\DS36799.rpm) of the upgrade file. You can also click the "Browse" button to browse the folders on your PC and select the desired file. **Note:** Implementation of this feature is Browser-dependent.
Start Upgrade	Click this button to start upgrading the firmware.

NAS via the Internet

Overview

If your LAN is connected to the Internet, typically by a Broadband Gateway/Router and Broadband modem, you can make the NAS available via the Internet. Features available to Internet users include:

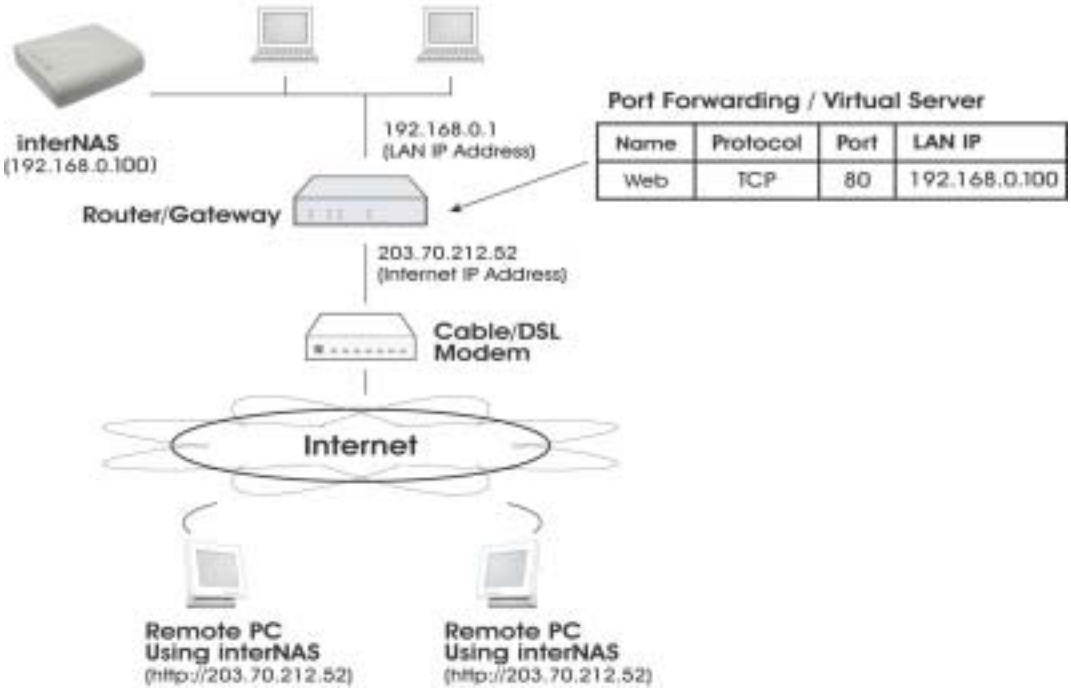
- Using a Web browser to view and download files.
- Remote management

Making the NAS available via the Internet

If your LAN is connected to the Internet via a Router or Gateway, you can make the NAS available from the Internet.

No changes to the NAS configuration are required, unless you wish to use a port number other than the default value of 80 for Web connections.

Your Router or Gateway must be configured to pass incoming HTTP connections (and optionally, IPP connections) to the NAS. This feature is normally called *Port Forwarding* or *Virtual Servers*, and is illustrated below.



Connecting via the Internet

- The default port number for Web browser connections is 80. If you prefer to use a different port number, you can specify the port number on the NAS ***System*** screen. The "Web" entry for */Port Forwarding / Virtual Server* must then use the port number specified on the NAS ***System*** screen.
- To connect to the NAS, Internet users need to know and use the Internet IP address of your Router/Gateway. (If the port number is not 80, they also need to know the port number.)

- If you have a domain name, users can connect using the domain name instead of the IP address.
  If your Router/Gateway supports ***Dynamic DNS***, you can use a domain name even if you get a different IP address every time you connect to your ISP. Check the documentation of your Router/Gateway for further information.

Using your Web Browser from the Internet

This is identical to using your Web browser from the LAN. See *Using the Web File Sharing* for details.

But remember:

- You must use the **Internet** IP address to connect to the NAS, NOT the LAN IP address.
- If the port number used by the NAS has been changed from the default (80), you must specify the correct port number when you connect.

  For example, if the port is 8080, and the Internet IP address is 203.70.212.52, enter the following as your browser's *Address* or *Location*:

  ```
  HTTP://203.70.212.52:8080
  ```

Printing via IPP (Internet Printing Protocol)

To print to the NAS via the Internet, the port used for IPP (TCP port 631) must be associated with the NAS. See *Making the NAS available via the Internet* earlier in this chapter for details.

The NAS is an IPP **Server**. To use IPP, your PC must be an IPP **client**. Windows 2000 and XP have built-in support for IPP, so there is no need to use the provided IPP client program.

IPP Setup - Windows 2000/XP

1. Start the *Add Printer* wizard.
2. Select *Network Printer*, and click "Next" to see the *Locate your Printer* screen, as shown below.

Windows 2000 - Locate your Printer

3. Select *Connect to a printer on the Internet or on your Intranet*, and enter the URL of the NAS as follows.

   `http://`**`ip_address`**`:631/printers/`**`printer_name`**

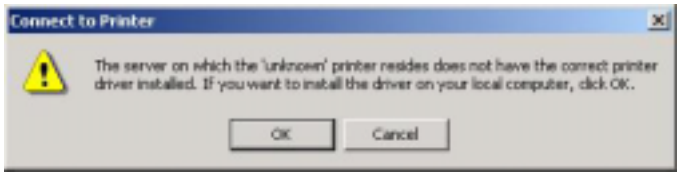
   Where:

   - **`ip_address`** represents the IP Address used to access the NAS. (As explained earlier, this may be the Internet address of a Gateway, rather than the NAS itself.)
   - **printer_name** is the name of the printer, as set on the NAS ***System*** screen.
   - The other text is fixed, and can NOT be changed. It must be entered exactly as shown, including the same case. (The path is case sensitive.)

   Example:

   `http://203.70.212.52:631/printers/LKLKG974163_p1`

4. Click "Next".
   If the connection can be established, and the printer on that port is on-line, the following dialog will be displayed.



Windows 2000: No printer driver

5. Click "OK", and then select the printer manufacturer and model to match the printer connected to the port on the IPP Server.

6. Click "Next", and complete the Wizard.
   The IPP printer is now ready for use.

IPP Client Setup (Windows 9x, ME)

You need to install the supplied IPP client program, as follows:

1. Insert the NAS CD-ROM in your drive. If the program does not start automatically, run the NAS_Setup.exe program in the top-level folder.
2. On the first screen, click the icon for *IPP Client*.
3. Follow the prompts to complete the installation.

IPP Client Configuration

1. Click the "Add IPP Port" icon. (In future, you can use the program entry created in the ***Start Menu***)
2. A screen like the following will be displayed.

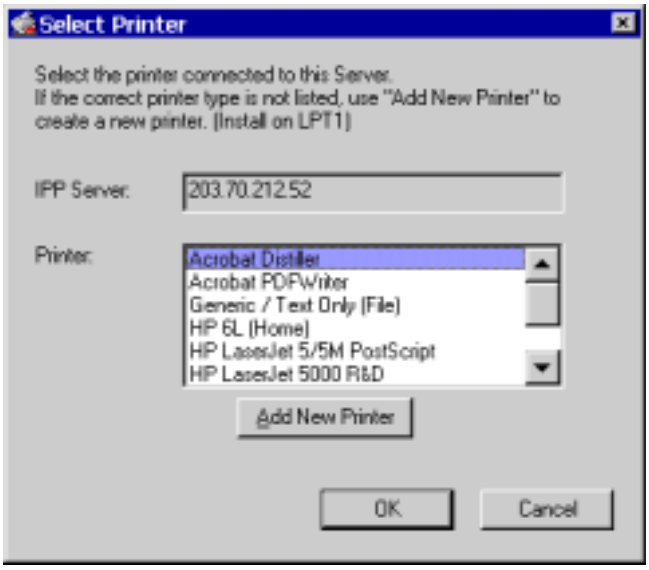
IPP Port

3. Configure this screen as follows:

IPP Server	Enter the Internet IP address used to connect to the NAS, as follows. `http://`**`ip_address`**`:631/printers/`**`printer_name`** Where: • **`ip_address`** represents the IP Address used to access the NAS. (As explained earlier, this may be the Internet address of a Gateway, rather than the NAS itself.) • **printer_name** is the name of the printer, as set on the NAS ***System*** screen. • The other text is fixed, and can NOT be changed. It must be entered

	exactly as shown. **Example:** `http://203.70.212.52:631/printers/LKLKG974163_p1`
Proxy Server	If Internet access from your PC is via a Proxy Server, check *Access IPP Server via Proxy Server*, and enter details of your Proxy Server. (These will be the same as your Browser configuration, so check your Browser settings.)

4. Click *Save* to create the IPP port on your system. You will see the following dialog:



Select Printer for IPP Port

5. Either select an existing printer to use the new port, and click OK.

   OR

   a) Click the "Add New Printer" button to start the *Add Printer* wizard.
   b) Complete the Wizard, installing the desired printer as a local printer on your PC.
   c) When returned to this screen, select the new printer and click OK.

6. The selected printer is now associated with the remote NAS, and installation is complete.

Changing the IPP Port Settings

After the IPP port is created, you can reach the ***IPP Port*** screen via the Windows *Port Settings* button:

1. Open the Printers folder (Start - Settings - Printers)
2. Right-click the IPP Printer, and select *Properties*.
3. Locate and click the *Port Settings* button (on the *Details* or *Port* tab, depending on your version of Windows).

Using the IPP Printer

The IPP Printer can be selected and used like any other Windows printer, but your Internet connection needs to be active.

An NAS may be unavailable for IPP printing for any of the following reasons:

- It is powered off.
- The IP Address of the Router/Gateway for the remote LAN has changed.
- The Internet connection used by the IPP Server is down.
- Network congestion causes the connection attempt to time out.

Remote Management

Connection via your Web browser from the Internet is the same as connecting via the LAN.

But remember:

- You must use the **Internet** IP address to connect to the NAS, NOT the LAN IP address.
- If the port number used by the NAS has been changed from the default (80), you must specify the correct port number when you connect.

  For example, if the port is 8080, and the Internet IP address is 203.70.212.52, enter the following as your browser's *Address* or *Location*:

  ```
  HTTP://203.70.212.52:8080
  ```

Once connected to the NAS via the Internet, all the Web-based management features are available.

However, the "Browse" button on the ***Shares*** screen only allows Web-based file browsing. (If using Internet Explorer on Windows, LAN users can Browse shares using Windows Explorer.)

Troubleshooting

This chapter lists some common problems, and the solution to them.

Problem 1: **The NAS Utility doesn't list any NAS Servers.**

Solution 1: Check the following:

- The NAS is installed, LAN connections are OK, and it is powered ON and startup is complete.
- Ensure that your PC and the NAS are on the same network segment. (If you don't have a router, this must be the case.)
- Ensure that your PC has the TCP/IP network protocol loaded. In Windows, this is done by using *Control Panel-Network*. If an entry for TCP/IP -> Network card is not listed, use *Add - Protocol - Microsoft - TCP/IP* to add it.
  You then need to select the new entry (TCP/IP -> Network card), click *Properties*, and configure the *IP Address* tab.
  - If your LAN has a DHCP Server, you can select "Obtain an IP Address automatically".
  - Otherwise, you must select "Specify an IP Address", and enter values for *IP Address* and *Subnet Mask*. The *IP Address* range commonly used is 192.168.0.1 to 192.168.0.254, with a *Subnet Mask* of 255.255.255.0. (The NAS Server's default IP Address is 192.168.0.2, with a Subnet Mask of 255.255.255.0). Remember that each device needs a **unique** IP Address, and the **same** Subnet Mask.

Problem 2: **The NAS is configured, but I can't find it in *Network Neighborhood*.**

Solution 2 Try using *Start - Find - Computer*, and enter the NAS Server's name. If this does not work, use ***Control Panel - Network*** to check the following:

- TCP/IP protocol is installed. If not, use *Add - Protocol - Microsoft - TCP/IP* to install it.
- Check the network Bindings:
  - Ensure the TCP/IP protocol is bound to your Network card (NIC).
    Select your Network card, click *Properties*, and then the *Bindings* tab. If TCP/IP is not bound (checked), check it.
  - Ensure 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 the *Bindings* tab. If *Client for Microsoft Networks* is not bound (checked), check it.
- If you don't have a router, check that your IP Address is compatible with the NAS Server's. This means it needs to be from the same address range (e.g. 192.168.0.1 to 192.168.0.254) 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.

Problem 3 When I click on an NAS folder icon in *Network Neighborhood*, I get prompted for a password.

Solution 3 This can happen in the following situations:

- The Logon name you used on your PC is recognized by the NAS, but the password is not. Simply enter your NAS password, or make your Windows password the same as the NAS password.
- The logon name you used on your PC is NOT recognized by the NAS, and was converted to *guest*, with *guest* access rights. Ask the NAS Administrator to create a *user name* for you. (Use the same name as on your PC.)

- You do NOT have access permission for this share.
  Ask the NAS Administrator to grant you access.

Note: Windows uses the *Computer name*, as shown on *Control Panel - Network - Identification*, as the default *Logon Name*. But you can create a new Windows logon name by merely entering a new name and password at the Logon prompt.

Appendix A- Regulatory Approvals

FCC Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example-use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator your body.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may cot cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Channel

The Wireless Channel sets the radio frequency used for communication.

- Access Points use fixed Channel. You can select the Channel used. This allows you to choose a Channel which provides the least interference and best performance. In the USA and Canada, 11 channel are available. If using multiple Access Points, it is better if adjacent Access Points use different Channels to reduce interference.
- In “Infrastructure” mode, Wireless Stations normally scan all Channels, looking for an Access Point. IF more than one Access Point can be used, the one with the strongest signal is used. (This can only happen within an ESS.)

- If using “Ad-hoc” mode (no Access Point), all Wireless stations should be ser to use the same Channel. However, most Wireless stations will still scan all Channels to see if there is an existing “Ad-hoc” group they can join.

CAUTION:

1) To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.
2) This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Appendix B - Licenses

Overview

Many software components are covered by the GNU GPL (General Public License). Some are covered by the BSD License.

- The following table provides details of the various components.
- The text of both Licenses is below.

Package Name	***License***
bash	GPL
bftpd	GPL
BusyBox	GPL
CUPS	GPL
e2fsprogs	GPL
gawk	GPL
gdbm	GPL
glibc	LGPL
hdparm	BSD
Kernel	GPL

libtermcap	LGPL
Lilo	BSD
LPRng	GPL
mod-utils	GPL
net-tools	GPL
openssl	BSD
pam	BSD or GPL
quota	BSD
Samba server	GPL
sh-util	GPL
smtpclient	GPL
sysVinit	GPL
telnet-server	BSD
textutils	GPL
thttpd	BSD
Tinylogin	GPL
Ucsc-smartsuite	GPL
udhcp	GPL
upnpsdk	BSD

util-linux	GPL
vixie-cron	Distributable
XFS patch	GPL
xfsdump	GPL
xfsprogs	GPL
xinetd	Distributable

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