



# ***CFORCE***<sup>TM</sup> **NAS** **G7 MegaDisk**

**Owner's Guide**



[www.FantomDrives.com](http://www.FantomDrives.com)



## Federal Communications Commission

### Radio Frequency Interference 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 or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

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

Changes or modifications not explicitly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Only use shielded cables, certified to comply with FCC Class B limits, to attach this equipment. Failure to install this equipment as described in this manual could void the user's authority to operate the equipment.

Canadian Department of Communications Compliance: This equipment does not exceed Class B limits per radio noise emissions for digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. Operation in a residential area may cause unacceptable interference to radio and TV reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

Conformite aux reglements du Department Canadien de Communications: Cet equipement n'excede pas les limites de Classe B concernant les bruits des emissions de radio pour le dispositif digital etablies par le Reglement d'Interference de Radio du Departement Canadien de Communications. L'operation de cet equipement dans un quartier residential peut occasionner des parasites inacceptables dans la reception de la radio ou de la television exigeant le proprietaire ou l'operateur de faire toutes les necessaires pour corriger cet interference.

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During the specified warranty period, Fantom Drives guarantees that the product will perform according to specifications determined by the manufacturer, and will be free of defects. Parts and labor of the received product, and replacement parts and labor are guaranteed during the specified warranty period. The warranty covers defects encountered in normal use of the product, and does not apply when damage occurs due to improper use, abuse, mishandling, accidents, sand, dirt, excessive dust, water damage, or unauthorized service. The product must be packed in its original packing material when shipped, or the warranty will be void. In all cases, proof of purchase must be presented when a warranty claim is being made.

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If you have a problem installing your system or suspect it is malfunctioning, please contact the Authorized Fantom Drives Reseller from whom you purchased the system. If the reseller fails to resolve the problem, please visit Fantom Drives's Support site at [www.FantomDrives.com/support](http://www.FantomDrives.com/support), or call our help desk for assistance. Please have the model, serial number, date of purchase, and the reseller's name available before calling. If possible, call from a telephone near the system so we can more readily direct you to make any necessary system corrections, should they be required.

## Returning Materials

If a reseller or Fantom Drives Technician finds it necessary to have the system returned for testing or servicing, a Return Materials Authorization (RMA) number will be issued. The RMA number must be placed on the outside of the carton in large, visible letters near the address label. Return the complete system including all cables and software. The system must be packed in the original packing materials and shipped prepaid. Fantom Drives will repair the system and return it prepaid by similar common carrier and priority. Please record the RMA number and make reference to it when inquiring on the status of the system. A returned unit found to be fault-free will carry a \$65.00 charge for service and repackaging.



## Welcome From Fantom Drives

We are pleased that you have chosen the MegaDisk NAS. Our systems are designed for speed, reliability, compatibility, and performance. We think you will find the system easy to install, and a productive addition to your computer system.

This manual presumes that you are familiar with standard computer operations; this includes copying files, opening documents, clicking with the mouse, and organizing files or folders within other folders. If you are unfamiliar with these operations, please consult the User's Guide that was supplied with your computer system. Your computer dealer and local user's groups are also good sources of information. After you are comfortable with the operation of your computer, continue reading this manual which describes hardware installation and operation.

Thank you again for choosing a Fantom Drives system. Please fill out the enclosed registration card and mail it to the address below. Mailing the registration card registers your system and provides us with helpful information. Alternatively, You may also register your product online at [www.FantomDrives.com](http://www.FantomDrives.com).

Your comments assist us in improving and updating our products. Please feel free to share them with us. Please send comments to:

**Fantom Drives**

Attn: Customer Service

19260 Van Ness Ave

Torrance, CA 90501

Internet: <http://www.FantomDrives.com>



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## Chapter 1 - Getting Started

Thank you for purchasing The Fantom Drives MegaDisk NAS storage solution. With speed, high capacity, ease of use, and support for numerous applications, MegaDisk NAS is the ideal solution for all of your data storage needs.

Please take advantage of the information contained within this manual to ensure easy setup and configuration. If at any time you require technical assistance, Fantom Drives's Help Desk is available at [fantomdrives.com/help](http://fantomdrives.com/help), or via email at [Support@FantomDrives.com](mailto:Support@FantomDrives.com).

### 1. Features and Benefits

MegaDisk NAS is a versatile and low cost storage solution, allowing it to be utilized in several different configurations:

- As a shared storage device for multiple PCs, Macs, and UNIX/Linux workstations
- As a central, fault tolerant data server for a home or small business network
- As a central backup station

<b>Data Reliability Features:</b> <ul style="list-style-type: none"><li>• RAID Level 0, 1, or Span</li><li>• RAID Auto Rebuild</li><li>• Network Backup</li></ul> <b>Network:</b> <ul style="list-style-type: none"><li>• 10/100/1000 autosensing Ethernet port</li><li>• Windows Client Support</li><li>• UNIX/Linux Client Support</li><li>• Apple OS X Client Support</li></ul>	<b>Benefits:</b> <ul style="list-style-type: none"><li>• Easy-to-use for non-MIS personnel</li><li>• SATA (Serial ATA) disk channel interface</li><li>• Networked Storage on Gigabit Ethernet</li><li>• Easy to use GUI</li><li>• Small footprint</li><li>• Centralized Music Server for iTunes</li><li>• Unattended download feature</li></ul>
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Your MegaDisk NAS warranty can be found on the included documentation CD. Please register your MegaDisk NAS electronically over the web or print out the registration form for mailing.

### 2. System Requirements and Compatibility

The MegaDisk NAS is designed for universal compatibility. It features SMB/CIFS, FTP, and NFS connectivity for host access.

### 3. Unpacking the MegaDisk NAS

Please unpack your MegaDisk NAS in a static free environment, carefully making sure not to damage or discard any of the packing material. If the RAID subsystem appears damaged, or if any items of the contents listed below are missing or damaged, please contact your dealer or distributor immediately. In the unlikely event you may need to return the MegaDisk NAS for repair or upgrade, please use the original packing material to ensure safe transport.



## 4. What's Included

Your MegaDisk NAS comes with the following items:

- 1 MegaDisk NAS unit
- 1 MegaDisk NAS Product CD
- 1 MegaDisk Stand
- 1 Quick Install Guide
- 1 power cord
- 1 Cat5e Gigabit Ethernet cable

## 5. Choosing a place for your MegaDisk NAS

When selecting a place to set up your Disk Array, be sure to follow these guidelines:

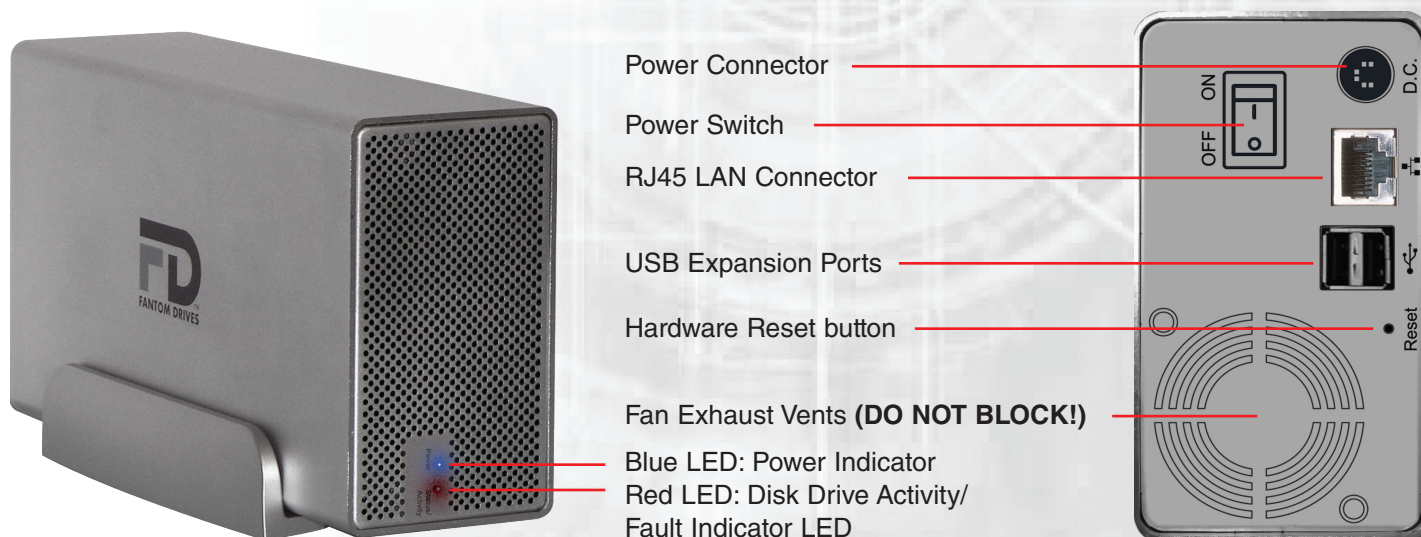
- Place on a flat and stable surface capable of supporting at least 25lbs
- Place the Disk Array close enough to a network jack for the Ethernet cable to reach it.
- Use a grounded wall outlet (uninterruptible power supply is recommended.)
- Avoid an electrical outlet controlled by wall switches or automatic timers. Accidental disruption of the power source may wipe out data in the memory of your computer or Disk Array.
- Keep the entire system away from potential sources of electromagnetic interference, such as loudspeakers, cordless telephones, etc.

Caution ! Avoid direct sunlight, excessive heat, moisture, or dust.

## 6. The MegaDisk NAS interface components

The following figures illustrate the connector locations for the MegaDisk NAS:

### FRONT VIEW





## Chapter 2- Connecting the MegaDisk NAS

### 1. Connections

1. Connect an Ethernet cable from your network to the LAN port on the back panel.
2. Plug the AC adapter cord into the power port on the back of the Drive. The plug should not require much effort to insert. If the plug will not go in, do not force it; the plug is probably upside down. Rotate the plug and try again. Incorrectly inserting the plug could damage the MegaDisk NAS and void the warranty.
3. Plug the power cord into the cord socket in the AC adapter. Plug the other end into an AC outlet.
4. Flip on the power switch. The MegaDisk NAS will boot. The Power indicator light should glow blue, and the HDD Activity LED will glow or blink red and go dark once the drives spun up. If the blue LED does not glow after a few minutes, or the red light glows solid please check the following:

**Note:**

The Disk Activity LED (red) behavior has been altered in firmware rev 2.6.2a-n. Previous versions glowed red under normal operation.

- Make sure both the MegaDisk NAS and your hub or switch have power and are properly powered on.
- Make sure both ends of the network cable are properly connected. The RJ45 Ethernet plug latches into the socket when properly connected.
- Verify that the Ethernet cable is not damaged- Check operation with another Ethernet cable.
- Please consult appendix A, “Troubleshooting” for further diagnosis and recovery.

### 2. Accessing System Administration for the first time

The MegaDisk NAS comes preconfigured with the LAN port set to DHCP (Dynamic Host Configuration Protocol.) The default WINS (Windows Internet Naming Service) for the MegaDisk NAS is “GForceNAS”



**IMPORTANT! If you are adding a MegaDisk NAS to a network with existing MegaDisk NAS products, please make sure to assign each unit a different name. See Chapter 3, Section 2.3.1 for more information.**



**Windows hosts can access the MegaDisk NAS via WINS. Mac OS X and \*nix based workstations may not support WINS and would require your network administrator to provide the newly assigned IP address before accessing the MegaDisk NAS. Note that WINS naming will not work if the storage is not initialized.**

#### 2.1 Launching the IP Storage Administration GUI

- 2.1.1 Make sure your MegaDisk NAS LAN port is connected to a hub or a switch that is connected to the DHCP server, or connected directly to your computer's LAN port. When connected directly to your computer's LAN port, make sure your host computer is set to “DHCP” addressing, and the MegaDisk NAS will self assign the address 192.168.1.1, and will activate its built in DHCP server. This is the preferred method for initial administration on non-Windows based hosts.
- 2.1.2 (Windows hosts) Point your browser to “http://GForceNAS”

**Note:**

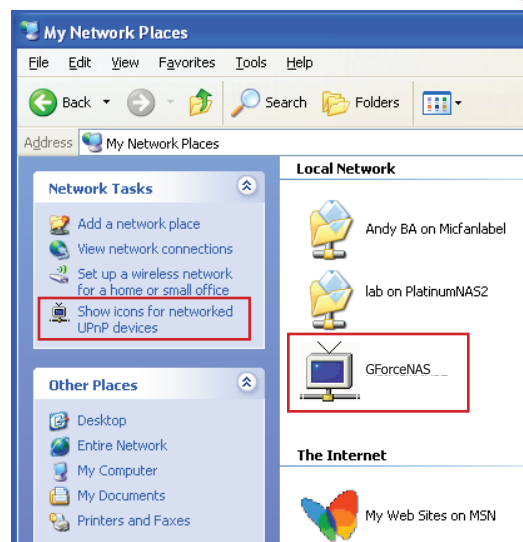
Direct connection to a host computer requires a crossover Ethernet cable if the host Ethernet connection is not a gigabit Ethernet connection.



# 2-Connecting the MegaDisk NAS

2.1.3 (Windows UPnP enabled hosts) Windows XP and newer support Universal Plug n' Play (UPnP) discovery. To enable UPnP, navigate to "My Network Places" and select "Show icons for networked UPnP devices." Confirm the operation in the confirmation dialog box. Once UPnP is enable, a Remote UPnP device icon should appear. Double Click the UPnP icon for the MegaDisk NAS, and a browser session will automatically launch.

**Note:**  
The UPnP Icon for MegaDisk NAS may blink in the explorer windows. This is normal behavior.



2.1.4 (Other hosts) Point your browser to "http://[MegaDisk NAS IP Address]."

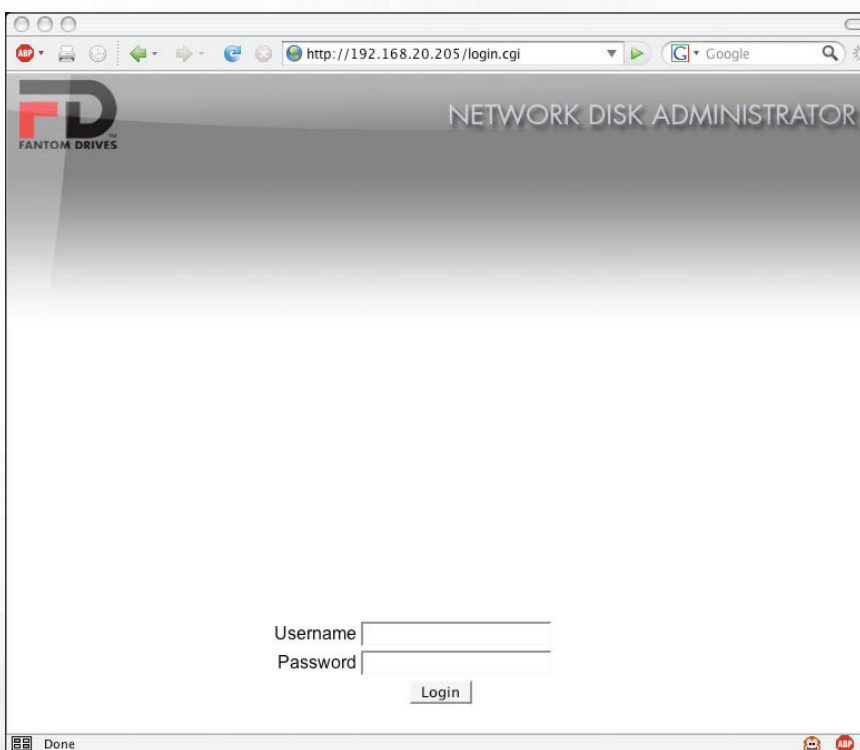
## 2.2 Logging In

The default User ID and password on the MegaDisk NAS are:

**UserID: admin**  
**Password: admin**

Enter the userID and password, and click the "Login" button.

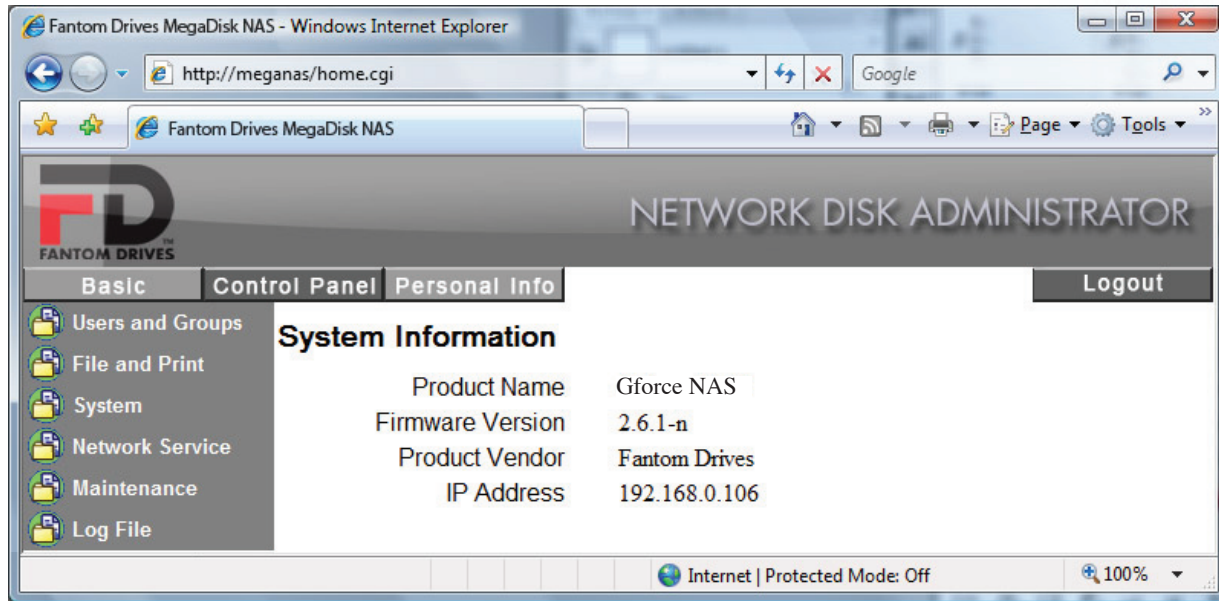
You are now ready to administer and customize your MegaDisk NAS.



## Chapter 3- Administering the MegaDisk NAS

This chapter describes the menu and control structure for your MegaDisk NAS. The configuration utility is firmware-based and its operation is independent of host computer type or operating system.

At initial login, the user will be greeted with the Product Information Screen:



The administration user interface utilizes a menu desktop motif, and is organized as illustrated in the table on the next page:



# 3-Administering the MegaDisk NAS

## The Main Menu Configuration Tree

<b>1. Quick Setup (Basic)</b>	<b>1. Quick Setup</b>	1 Wizard 2 Add User 3 Add Group 4 Add Share
<b>2. Control Panel</b>	<b>1. Users and Groups</b> <b>2. File and Print</b> <b>3. System Configuration</b> <b>4. Network Services</b> <b>5. System Maintenance</b> <b>6. System Logs</b>	1 User Management 2 Group Management 1 File Server Configuration 2 Share Management 3 Print Server Configuration 1 LAN Settings 2 Time Setting 3 Turn Off MegaDisk NAS 4 System Info 5 Disk Usage 6 Error Notification Control 1 DHCP Server Control 2 iTunes Sharing and Bonjour 3 BitTorrent client control 1 Disk Utility 2 RAID Setting 3 Upgrade Firmware 4 Save Configuration 5 Restore Configuration 6 Reset to Factory Default 1 SAMBA Log 2 FTP Log 3 System Log 4 DHCP Server Log 5 Administration Log
<b>3. Account Info</b> <b>4. Logout</b>		

The manual refers to the above sections as [Column 1].[Column 2].[Column 3]

## 1. Quick Setup

Quick setup allows a simple, step by step control of the basic required settings to get your MegaDisk NAS up and running. You may access the quick setup controls by navigating to “Basic” -> “Quick Setup”.

### 1.1 Configuration Wizard

The configuration wizard is a 6 step process that is used to quickly customize your MegaDisk NAS to your network. The following are the steps involved:

1.1.1 Step 1: Specify the UI language. The default language settings is browser default. Click next to continue.

1.1.2 Step 2: Set Administrative Password. Fantom Drives recommends that you choose your own password for security reasons. To do so, enter the desired administrative password in the password entry and confirm entry boxes, and click “Next” to continue.

1.1.3 Step 3: Set your MegaDisk NAS system name. Enter the desired system name in the hostname entry box, and click “Next” to continue.

1.1.4 Step 4: IP Protocol Settings. Your MegaDisk NAS is preconfigured as a DHCP client for automatic IP address and network setting. If your network does not have a DHCP server or you require a fixed configuration, you may customize the following IP fields illustrated right. When all fields are entered, click “Next” to continue.

#### Step 4/6

##### Internet Protocol Setting

IP Address	<input checked="" type="radio"/> Obtain IP Address automatically
	<input type="radio"/> Use following IP Address
IP Address	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="0"/> <input type="text" value="106"/>
Subnet Mask	<input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="0"/>
Default Gateway	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="0"/> <input type="text" value="1"/>
DNS Server	<input checked="" type="radio"/> Obtain DNS Server Address automatically
	<input type="radio"/> Use following DNS Server Address
Primary	<input type="text" value="66"/> <input type="text" value="75"/> <input type="text" value="164"/> <input type="text" value="90"/>
Secondary	<input type="text" value="66"/> <input type="text" value="75"/> <input type="text" value="164"/> <input type="text" value="89"/>
Others	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

1.1.5 Step 5: Set the time

You may set the system date and time in this step manually, or specify an NTP (Network Time Protocol) server as illustrated right. When all fields are entered, click “Next” to continue.

#### Step 5/6

##### Time Settings

Date	Mon	<input type="text" value="8"/>	Date	<input type="text" value="18"/>	Year	<input type="text" value="2007"/>
Time	Hour	<input type="text" value="11"/>	Min	<input type="text" value="15"/>		<input type="text" value="AM"/>
Time Zone	<input type="text" value="(GMT-08:00) Pacific Time (US &amp; Canada), Tijuana"/>					
NTP Server	<input checked="" type="radio"/> Default	<input type="text" value="time.nist.gov"/>				
	<input type="radio"/> User Define	<input type="text" value="pool.ntp.org"/>				

1.1.6 Step 6: Review and Confirm your settings. In this screen all settings made in the previous 5 steps are displayed. If all settings are correct, click “complete” to finalize the wizard, or “Back” to go back and make an changes. To cancel the wizard, click the “Cancel” button.



## 1.2 Add User Wizard

The Add User wizard is a 3 step process that is used to quickly create user accounts for NAS access. It is accessible by navigating to “Basic” -> “Quick Setup” -> “Add User”. The following are the steps involved:

**1.2.1 Step 1:** Enter the user name and password (re-enter the password in the confirmation field.) Optionally, enter a long user description, and you may create a home folder and specify a storage quota, or a maximum space allowed the user. Click “Next” to continue.

Step 1/3

Add User

User Name

Password   (Confirm)

Description (optional)

☒ Create Private Folder (Share)  
Private Folder (Share) Location:

☐ Enable Quota of  MB

**1.2.2. Step 2:** Define group assignment. When created, all available groups will be displayed in the “Not Member” section of this window. To add group assignments to the new user, click to select the groups to add and click the “Add” button. To remove group assignments, select the groups to remove in the “Member of” box and click the “Remove” button. When group assignment is complete, click “Next” to continue.

Step 2/3

Group Assignment - alex

Member of		Not Members
===== END LIST =====	<input type="button" value="Add"/>	guest-share ===== END LIST =====
	<input type="button" value="Remove"/>	

**1.2.3 Step 3:** Define Share Permissions. When created, all available shares will be displayed in the “No Access” section of this window. To add share assignments to the new user, click to select the shares to add and click either “Read Only” to allow read only access, or “Writeable” to allow read/write access. To remove share assignments, select the shares to remove in the “Allowed” box and click the “Remove” button. When share assignment is complete, click “Next” to continue.

Step 3/3

Share Permission - alex

Allowed		No Access
===== END LIST =====	<input type="button" value="Read Only"/> <input type="button" value="Writeable"/>	public ===== END LIST =====
	<input type="button" value="Remove"/>	

## 1.3 Add Group Wizard

The Add Group wizard is a 3 step process that is used to quickly create user groups for NAS access. It is accessible by navigating to “Basic” -> “Quick Setup” -> “Add Group”. The following are the steps involved:

**1.3.1 Step 1:** Enter the group name, and click “Next” to continue.

Step 1/3

Add Group

Group Name

**1.3.2. Step 2: Define group assignment.** When created, all available users will be displayed in the “Not Members” section of this window. To add user assignments to the new group, click to select the groups to add and click the “Add” button. To remove users from the group, select the users to remove in the “Members” box and click the “Remove” button. When user assignment is complete, click “Next” to continue.

Step 2/3

Group Members - sales

Members

==== END LIST =====

<< Add

Remove >>

Not Members

admin  
alex  
guest-share  
==== END LIST =====

**1.3.3 Step 3: Define Share Permissions.** When created, all available shares will be displayed in the “No Access” section of this window. To add share assignments to the new user, click to select the shares to add and click either “Read Only” to allow read only access, or “Writeable” to allow read/write access. To remove share assignments, select the shares to remove in the “Allowed” box and click the “Remove” button. When share assignment is complete, click “Next” to continue.

Step 3/3

Share Permission - sales

Allowed

==== END LIST =====

<< Read Only

<< Writeable

Remove >>

No Access

public  
==== END LIST =====

## 1.4 Add Share Wizard

The Add Share wizard is a 3 step process that is used to quickly create shares for NAS access. It is accessible by navigating to “Basic” -> “Quick Setup” -> “Add Share”. The following are the steps involved:

**1.4.1 Step 1: Enter the share name in the “Share Name” box.** The MegaDisk NAS will automatically assign a path, and you may enter a share description in the “Description” box. Click “Next” to continue.

Step 1/3

Add Share

Share Name sales

Path /mnt/md1/sales

Description (Optional)

**1.4.2. Step 2: Define SMB and FTP Access.** When the share is initially created, all available users groups will be displayed in the “No Access” section of this window. To add user and group assignments to the new share, click to select the groups to add and click either “Read Only” to allow read only access, or “Writeable” to allow read/write access. Groups are denoted by a leading “@”. To remove share assignments, select the users or groups to remove in the “Allowed” box and click the “Remove” button. Alternatively, you may check the “Allowed for All” checkbox to make the share public. When share assignment is complete, click “Next” to continue.

Step 2/3

Windows, FTP Access - sales

☐ Allow for all

Allowed

alex (Writable)  
admin (Writable)  
@guest-share (Read Only)  
==== END LIST =====

<< Read Only

<< Writeable

Remove >>

No Access

guest-share  
==== END LIST =====

The ones started with @ are groups.



1.4.3 Step 3: Define Share NFS Access. The MegaDisk NAS can allow NFS access publicly, across an IP address subnet, or to individual IP addresses. To add individual host access to the share, check “IP Address”, specify the host IP address in the entry boxes to the left of the checkbox, and click the “Add” button. To add host access to a subnet, check “Subnet”, specify the beginning and ending IP address

Step 3/3

NFS Access - sales

☐ Allow for all

Allowed IP/Subnet

==== END LIST ====

Add

Remove

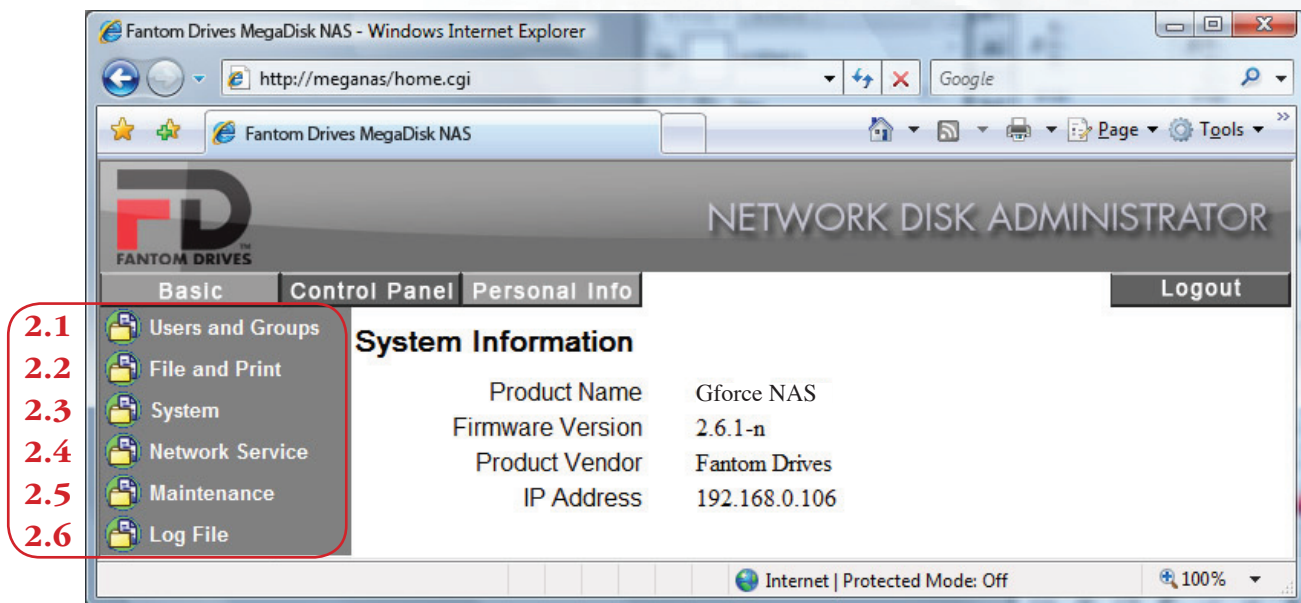
IP Address ☐

Subnet ☐

in the entry boxes to the left of the checkbox, and click the “Add” button. To remove access, select the host addresses to remove in the “Allowed IP/Subnet” box and click the “Remove” button. Alternatively, you may check the “Allowed for All” checkbox to make the share public. When share assignment is complete, click “Complete” to finalize the wizard.

## 2. The Control Panel

The control panel is the central menu for controlling the MegaDisk NAS. It is divided into 6 menu options:



### 2.1 Users and Groups

Creating and administering user accounts are accessible by selecting “Users and Groups” from the Control Panel. This screen allows you to configure local user settings and assign or remove group membership. Permissions and authorization for users and groups are assigned to each folder shared.

## 2.1.1 User Management

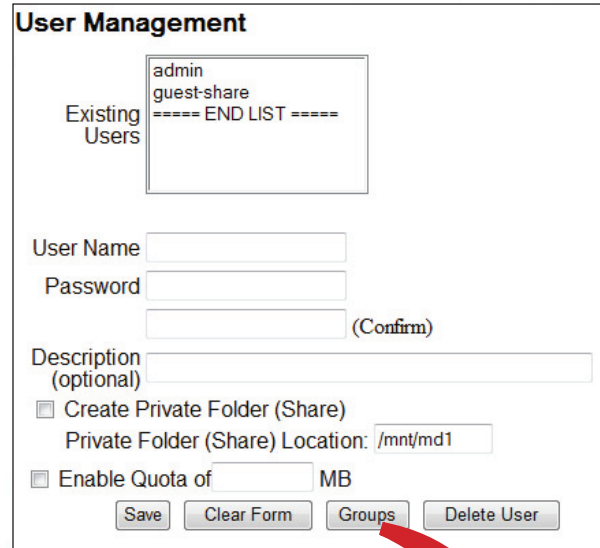
User Management is accessible by navigating to “Control Panel” -> “Users and Groups” -> “User Management.” In the User Management screen, users accounts can be created, deleted, assigned a home folder, and assigned quotas.

2.1.1.1 To create a new user, enter the username and password in the appropriate fields. Optionally, enter a long user description, and you may create a home folder and specify a storage quota, or a maximum space allowed the user. Please note that spaces, slashes or commas are not valid for user names. To complete the procedure, click the **Save** button.

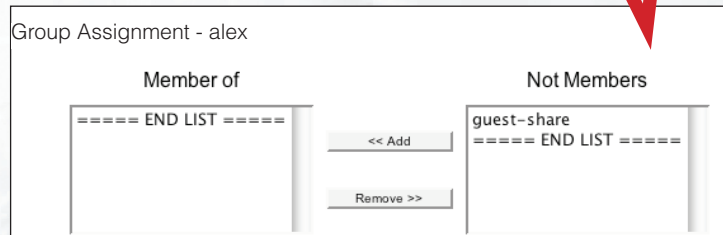
2.1.1.2 To modify an existing user, select the user from the “Existing Users” box. All user details will appear in the respective boxes below. You may change the password, enter or change a long user description, create or remove a home folder, and specify a storage quota, or a maximum space allowed the user. To complete the procedure, click the **Save** button.

2.1.1.3 To define group assignment, select the user from the “Existing Users” box and click the “Groups” button. In the group assignment box, you may add group assignments to the new user, by clicking to select the groups in the “Not Members” box and clicking the “Add” button. To remove group assignments, select the groups to remove in the “Member of” box and click the “Remove” button. When group assignment is complete, click “Save.”

2.1.1.4 To delete an existing user, select the user from the “Existing Users” box and click the “Delete User” button.



The screenshot shows the 'User Management' interface. At the top, there's a list of 'Existing Users' containing 'admin' and 'guest-share'. Below this are input fields for 'User Name', 'Password', and a confirmation password field. There's also an optional 'Description' field. Two checkboxes are present: 'Create Private Folder (Share)' with a location field set to '/mnt/md1', and 'Enable Quota of' followed by a blank field and 'MB'. At the bottom are four buttons: 'Save', 'Clear Form', 'Groups', and 'Delete User'. A red arrow points from the 'Groups' button to the 'Group Assignment - alex' screenshot below.



The screenshot shows the 'Group Assignment - alex' interface. It has two main sections: 'Member of' and 'Not Members'. The 'Member of' section contains a list with '===== END LIST ====='. The 'Not Members' section contains a list with 'guest-share' and '===== END LIST ====='. Between these sections are two buttons: '<< Add' and 'Remove >>'. A red arrow points from the 'Groups' button in the previous screenshot to this interface.

## 2.1.2 Group Management

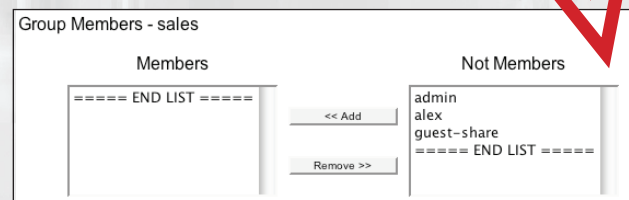
Group Management is accessible by navigating to “Control Panel” -> “Users and Groups” -> “Group Management.” In the Group Management screen, user groups can be created, deleted, and assigned members.

2.1.2.1 To create a new group, enter the group name in the “Group Name” field. To add or remove members to the group, see section 2.1.2.3 below. To complete the procedure, click the **Save** button.

2.1.2.2 To modify an existing group, select the group from the “Existing Groups” box. To add or remove members to the group, see section 2.1.2.3 below. To complete the procedure, click the **Save** button.



The screenshot shows the 'Group Management' interface. It features a list of 'Existing Groups' containing 'guest-share'. Below this is a 'Group Name' input field. At the bottom are four buttons: 'Save', 'Clear Form', 'Members', and 'Delete Group'. A red arrow points from the 'Members' button to the 'Group Members - sales' screenshot below.



The screenshot shows the 'Group Members - sales' interface. It has two main sections: 'Members' and 'Not Members'. The 'Members' section contains a list with '===== END LIST ====='. The 'Not Members' section contains a list with 'admin', 'alex', 'guest-share', and '===== END LIST ====='. Between these sections are two buttons: '<< Add' and 'Remove >>'. A red arrow points from the 'Members' button in the previous screenshot to this interface.



2.1.2.3 To add or remove members from a group, select the group from the “Existing Groups” box and click the “Members” button. In the group assignment box, you may add users to the group by clicking to select users in the “Not Members” box and clicking the “Add” button. To remove users, select the users to remove in the “Members” box and click the “Remove” button. When group assignment is complete, click “Save.”

2.1.2.4 To delete an existing group, select the group from the “Existing Groups” box and click the “Delete Group” button.

## 2.2 File and Print Controls

The controls for managing File sharing services, shares, and print faculties are accessible by selecting “File and Print” from the Control Panel.

### 2.2.1 File Server Controls

File Server controls are accessible by navigating to “Control Panel” -> “File and Print” -> “File Server.” In the File Server Management screen (illustrated below) you may enable, disable, and control protocol specific settings for SMB/CIFS, FTP, and NFS Services as well as enable or disable guest access and quota support. To finalize changes, click on the **Save** button.

The screenshot shows the 'Network Disk Administrator' web interface. The top navigation bar includes 'Basic', 'Control Panel', 'Personal Info', and 'Logout'. The left sidebar lists various system functions: 'Users and Groups', 'File and Print' (selected), 'File Server', 'Share Management', 'Printer Server', 'System', 'Network Service', 'Maintenance', and 'Log File'. The main content area is titled 'File Server Setting' and contains several configuration sections, each with a red reference number:

- Character set:** A dropdown menu set to 'English(CP437)'.
- Windows Setting (2.2.1.1):** Includes an 'Enable' checkbox (checked), a 'Workgroup' text field with 'WORKGROUP', a 'Description' text field with 'Fantom Drives GForce NAS', and a 'WINS Server (Optional)' field with four empty sub-fields.
- FTP Server Setting (2.2.1.2):** Includes an 'Enable' checkbox (checked) and a 'Port Number' text field with '21'.
- NFS Server Setting (2.2.1.3):** Includes an 'Enable' checkbox (checked).
- Guest Access Setting (2.2.1.4):** Includes an 'Enable' checkbox (checked).
- Enable Quota (2.2.1.5):** Includes an 'Enable Quota' checkbox (unchecked) and a 'Guest-user Quota' text field followed by 'MB'.

A 'Save' button is located at the bottom right of the configuration area.

## 2.2.1.1 SMB/CIFS Controls

The Server Message Block network protocol is the most widely used network protocol. It is used by all variants of the Microsoft Windows operating system, Apple Macintosh OS X, and most Unix and Linux variants include support for it even if using a different networking protocol. You may enable or disable SMB/CIFS support by checking the “Enable” box in the “Windows Settings” Section (see illustration page 19.) You may also specify Workgroup, plain text description, and enter an optional WINS Server address.

## 2.2.1.2 FTP Services

FTP (File Transfer Protocol) is a commonly used, open standard protocol for exchanging files over any network that supports the TCP/IP protocol (such as the Internet or an intranet). Virtually every computer platform supports the FTP protocol. This allows any computer connected to a TCP/IP based network to manipulate files on another computer on that network regardless of which operating systems are involved (if the computers permit FTP access.) There are many existing FTP client and server programs, and many of these are free. You may enable or disable FTP server support, by checking the “Enable” box in the “FTP Settings” Section (see illustration page 19.) You may also specify a port other than the default (Port 21), as well as supported file character set language.

## 2.2.1.3 NFS Services

Network File System (NFS) is a network file system protocol originally developed by Sun Microsystems in 1984, allowing a user on a client computer to access files over a network as easily as if the network devices were attached to its local disks. It is commonly used by various UNIX and compatible host platforms. You may enable or disable NFS server support by checking the “Enable” box in the “NFS Settings” section (see illustration page 19.)

## 2.2.1.4 Guest Access

Guest access is defined as any user access who is not defined as a valid user by the MegaDisk NAS. To enable or disable guest access, checking the “Enable” box in the “Guest Access Settings” section (see illustration page 19.)

## 2.2.1.5 Quotas

Storage quotas are maximum space limits allowed per user. To enable or disable user and guest quotas, check the “Enable” box in the “user quotas” and/or the “Guest Quotas” in the quotas section (see illustration page 19.)

## 2.2.2 Share Management

Share Management controls are accessible by navigating to “Control Panel” -> “File and Print” -> “Share Management.” In the Share Management screen (illustrated right) you may create, delete, and assign access control to sharepoints.

2.2.2.1 To create a new share, enter the desired share name in the “Share Name” box. The MegaDisk NAS will automatically assign a path, and you may enter a share description in the “Description” box. Click the  button to commit.

The screenshot shows the 'Share Management' web interface. It features a table for 'Existing Shares' with one entry: 'public' followed by '==== END LIST ====='. Below this are input fields for 'Share Name', 'Path' (pre-filled with '/mnt/md1 /'), and 'Description (Optional)'. At the bottom, there are buttons for 'Windows,FTP Access', 'NFS Access', 'Save', 'Clear Form', and 'Delete Share'.



2.2.2.2. You may define SMB and FTP Access by selecting a share from the “Existing Shares” box and clicking the **Windows, FTP Access** button. To add user and group assignments to the share, click to select the groups to add and click either “Read Only” to allow read only access, or “Writable” to allow read/write access. Groups are denoted by a leading “@”. To remove share assignments, select the users or groups to remove in the “Allowed” box and click the “Remove” button. Alternatively, you may check the “Allowed for All” checkbox to make the share public. When share assignment is complete, click **Save** to complete the operation.

Windows, FTP Access - sales

☐ Allow for all

Allowed

alex (Writable)  
admin (Writable)  
@guest-share (Read Only)  
==== END LIST =====

<< Read Only  
<< Writable  
Remove >>

No Access

guest-share  
==== END LIST =====

2.2.2.3 Define Share NFS Access. The MegaDisk NAS can allow NFS access publicly, across an IP address subnet, or to individual IP addresses. You may define SMB and FTP Access by selecting a share from the “Existing Shares” box and clicking the **NFS Access** button. To add individual host access to the share, check “IP Address”, specify the host IP address in the entry boxes to the left of the checkbox, and click the “Add” button. To add host access to a subnet, check “Subnet”, specify the beginning and ending IP address in the entry boxes to the left of the checkbox, and click the “Add” button. To remove access, select the host addresses to remove in the “Allowed IP/Subnet” box and click the “Remove” button. Alternatively, you may check the “Allowed for All” checkbox to make the share public. When share assignment is complete, click **Save** to complete the operation.

NFS Access - sales

☐ Allow for all

Allowed IP/Subnet

==== END LIST =====

Add

Remove

☒ IP Address

☐ Subnet

2.2.2.4 To delete an existing share, select the share from the “Existing Shares” box and click the “Delete” button.

## 2.2.3 Print Server Setting

The MegaDisk NAS will automatically detect a USB printer attached and can share it with the network. Print Server settings are accessible by navigating to “Control Panel” -> “File and Print” -> “Printer Server.” You may enable or disable the USB printer sharing by checking/unchecking the “Enable” box in the print server dialog, and click **Save** to complete the operation.

Printer Server Setting

Enable ☒

Printer Name usb1p0

Description (optional) Lexmark International Lexmark E120n

Save

## 2.3 NAS System Setting

The controls for managing system settings and services are accessible by selecting “System” menu from the Control Panel. In this section you can set LAN port settings, set the time, get system information, disk usage, set up error notifications, and turn off the server.

## 2.3.1 LAN Settings

LAN Setting controls are accessible by navigating to “Control Panel” -> “System” -> “LAN Settings.” In the LAN setting screen (illustrated right.) you may change the WINS host name, Set or switch between DHCP or manual IP Address setting, and set or switch automatic or manual DNS servers. DHCP Allows for dynamic IP address assignment on TCP/IP networks. It is the preferred method to manage IP address assignments, is the default assignment of the MegaDisk NAS. Consult your network administrator for more information on these values as they are unique to your network. Click **Save** to complete the operation.

LAN Settings

Hostname

IP Address Setting ☒ Obtain IP Address automatically  
☐ Use following IP Address

IP Address      
Subnet Mask      
Default Gateway

☒ Obtain DNS Server Address automatically  
☐ Use following DNS Server Address

Primary      
Secondary      
Others

MAC Address

**Save**

## 2.3.2 Time Settings

Time Setting controls are accessible by navigating to “Control Panel” -> “System” -> “Time Settings.” The MegaDisk NAS allows manual time setting as well as automated NTP time synchronization. To set a manual date and time, Set NTP Server to “default” and the “default” entry box to “Not Use”. The Date and Time fields will become available for editing. To use NTP time synchronization, check either the “default” checkbox or the “User Define” checkbox. There are two default NTP servers provided for default use, or you may enter your desired NTP server address in the “User Define” entry box (if checked.) Click **Save** to complete the operation. To manually update the time, click the **Update Time** button.

Time Settings

Date Mon  Date  Year

Time Hour  Min  PM

Time Zone

NTP Server ☒ Default   
☐ User Define

**Save** **Update Time**

## 2.3.3 Turn Off/Reboot Server

To turn off the MegaDisk NAS, navigate to “Control Panel” -> “System” -> “Turn Off Server.” To turn off the server, click on the “Turn Off” button. You may also reboot the server by clicking the “Reboot” button.

**IMPORTANT:** Use the Reboot/Shutdown system functions to turn off the unit cleanly. Shutting down using the power button may result in data loss!

## 2.3.4 System Information

To access the System Information navigate to “Control Panel” -> “System” -> “Information.” The About page details the name and firmware revision of the MegaDisk NAS. It is the page that displays upon initial login.

## 2.3.5 Disk Usage Information

To access the Disk Usage Information, navigate to “Control Panel” -> “System” -> “Disk Usage.” The MegaDisk NAS can display disk usage for the currently mounted file systems, or per user including quotas by selecting “Summary” or “User” in the statistics information box. Click “Refresh” to see most current usage report.

Please select statistics information: <input type="text" value="Summary"/>				
Disk Name	Total	Used	Free	Used Percentage
/dev/md	224747MB	2584MB	222162MB	1%
<b>Refresh</b>				



## 2.3.6 Error Notification

The MegaDisk NAS can alert you or To access the Disk Usage Information, navigate to “Control Panel” -> “System” -> “Error Notification.” In the Error Notification Setting screen (illustrated below) you may select services to monitor and the method and targets to communicate fault. When finished configuring the error notification settings, click the “**Save**” button to complete.

**Error Notification Setting**

Monitoring Services Setting2.3.6.1

Disk Usage☒

Windows File Sharing Server☒

FTP Server☒

DHCP Server☒

Check Interval2.3.6.2

Interval

Hourly

Email Notification Setting2.3.6.3

Enable☒

Send Test Email

Error Handling Mail Serversmtp.fantomdrives.com

admin@fantomdrives.com

Error Handling Email Addresses

Pop-Up Notification Setting2.3.6.4

Enable☒

Send Test Pop-Up

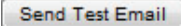
station1

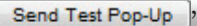
Error Handling Pop-Up Machines

Save

2.3.6.1 Select the Services to be monitored. Available services are disk usage, Windows file server, FTP, and DHCP.

2.3.6.2 Select the check interval for the event monitoring- Hourly or Daily.

**2.3.6.3 Notify via e-mail.** The MegaDisk NAS can send e-mail to specific e-mail addresses if a fault is detected with the system or monitored services. To enable e-mail notification, check the “Enable” box. Enter your network’s SMTP server’s network IP address in the “Error Handling Mail Server” entry box. SMTP (Simple Mail Transport Protocol) server is an external server that relays your network’s outgoing mail. If you do not know your SMTP server’s IP address, consult your network administrator. Lastly, enter up to 5 email recipients in the “Error Handling Email Addresses” entry boxes. To test your email notification settings, you may send a test email by clicking the “” button.


**2.3.6.4 Notify via Winpopup.** The MegaDisk NAS can send Winpopup notification to specific Windows and SMB enabled hosts capable of receiving SMB messages if a fault is detected with the system or monitored services. To enable Winpopup notification, check the “Enable” box, and enter up to 5 computer names in the “Error Handling Pop-Up Machines” entry boxes. To test your Winpopup notification settings, you may send a test pop-up by clicking the “” button.

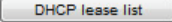
## 2.4 Network Service Setting

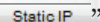

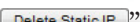

The controls for Network Service settings and services are accessible by selecting “Network Service” menu from the Control Panel. In this section you can enable/disable the DHCP server, iTunes and Bonjour, and BitTorrent.

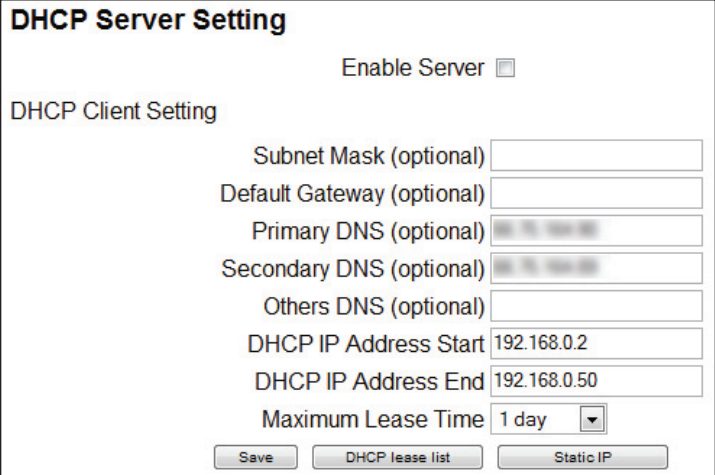
### 2.4.1 DHCP Server

DHCP Allows for dynamic IP address assignment on TCP/IP networks. Your MegaDisk NAS can serve as a DHCP server to your network. When enabled, it will dynamically assign an available IP address from the range specified. To access the DHCP Server controls, navigate to “Control Panel” -> “Network Service” -> “DHCP Server”.

**2.4.1.1** Check the box next to “Enable Server” to enable the DHCP server. Optionally, enter the desired Subnet, Gateway, and DNS (by default, Subnet mask is 255.255.255.0, gateway is the MegaDisk NAS, and DNS is the same as assigned to the MegaDisk NAS.) Set the desired DHCP range (default is 192.168.0.2-192.168.0.50) and set the maximum lease time before refresh. Click the “” button to complete the operation.

**2.4.1.2** To see the active DHCP leases, click the “” button. The MegaDisk NAS will display the host name, IP Address, MAC address, and lease time for all active leases.

**2.4.1.3** To assign static leases, or guaranteed IP Addresses, click the “” button. In the following dialog box, Enter the desired IP Address and the MAC address of the host desired, and click the “” button. To delete an existing Static IP address assignment, select the assignment from the “Existing Static IP” listbox, and click the “” button. When all settings have been entered, click the “” button to complete.



**DHCP Server Setting**

Enable Server ☐

DHCP Client Setting

Subnet Mask (optional)

Default Gateway (optional)

Primary DNS (optional)


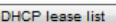
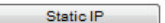
Secondary DNS (optional)

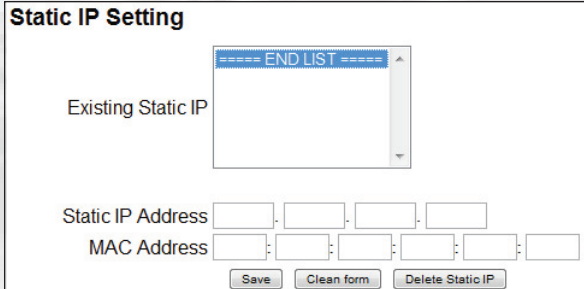
Others DNS (optional)

DHCP IP Address Start

DHCP IP Address End

Maximum Lease Time



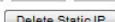


**Static IP Setting**

Existing Static IP

Static IP Address

MAC Address



## 2.4.2 iTunes Server

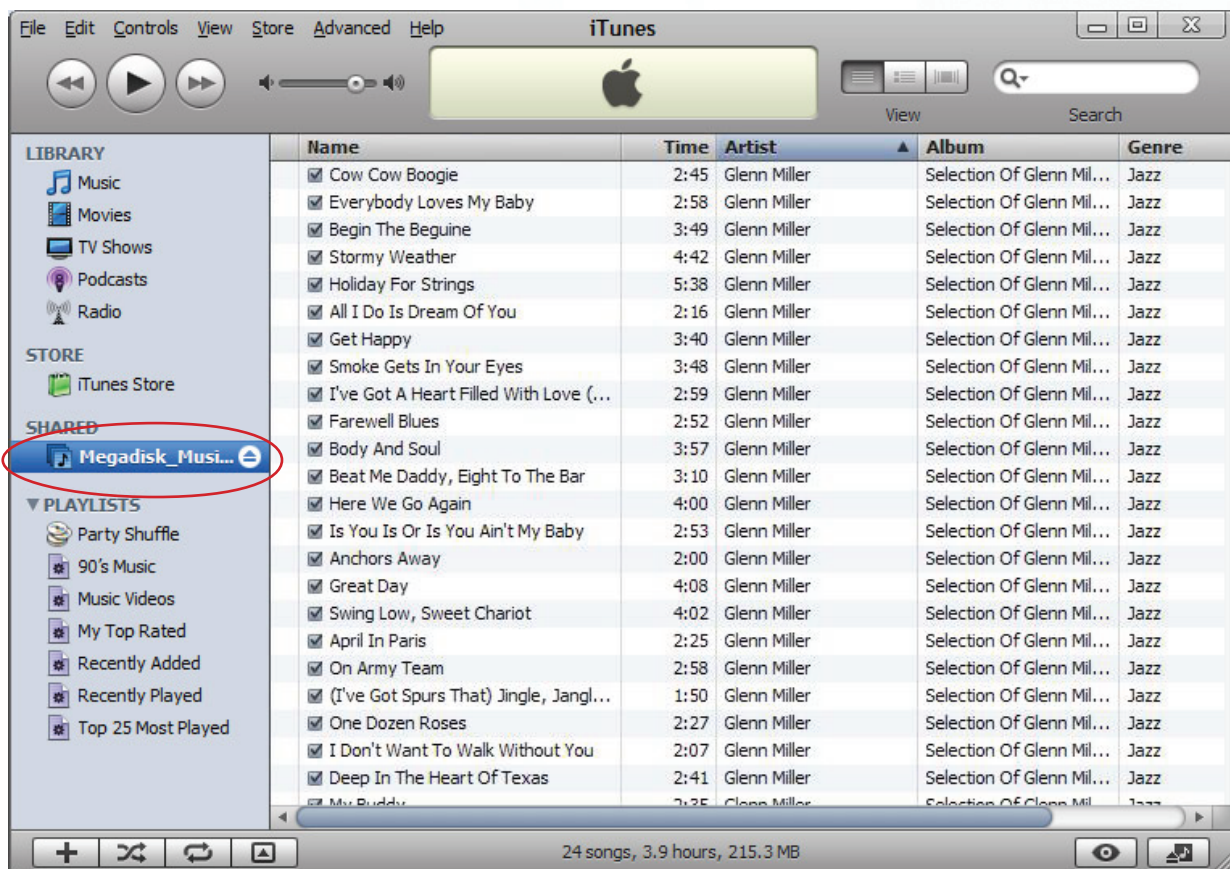
Your MegaDisk NAS is capable of sharing music to all iTunes enabled hosts on your network. When enabled, any iTunes 7.x enabled hosts that is set to “Look for Shared Libraries” can access and playback music located on the “/Music” directory in the “Public” share of your MegaDisk NAS. To access iTunes server control, navigate to “Control Panel” -> “Network Service” -> “Bonjour”. “Bonjour” is the trade name used by Apple to refer to its implementation of the zero-configuration networking protocol (<http://www.zeroconf.org/>) and is required for iTunes sharing. To enable or disable iTunes Server support, check (or uncheck) the checkboxes next to “Bonjour Setting Enable” and iTunes Enable.”

### Bonjour Setting

Enable ☒

iTunes Enable ☒

To access your shared music from iTunes, simply navigate to the MegaDisk NAS shared library as named in the configuration as illustrated:



## 2.4.3 BitTorrent Downloader

Your MegaDisk NAS is capable of unattended downloading and sharing of BitTorrent shared files. To download and share a torrent, navigate to “Control Panel” -> “Network Service” -> “BTorrent”. Click the **Browse...** button and select the BitTorrent file. Click the **Add** button to begin the download. The resulting file will download to the “/btdownload” directory in the “Public” share of your MegaDisk NAS. To control the amount of bandwidth your MegaDisk NAS will use for uploading and downloading, you may set a maximum bandwidth allowed both downstream (from the internet to your MegaDisk NAS) and upstream (from the MegaDisk NAS to the internet) by entering the desired limits in K/Sec in the respective entry boxes and clicking the **Save** button.

**BTorrent**

Max bandwidth down(KB/s) 
Max bandwidth up(KB/s) 

Save

Open torrent file 

Browse...

The torrent file is placed in /mnt/md1/public/btdown

Add



### Note:

BitTorrent is a peer-to-peer file sharing (P2P) communications protocol. BitTorrent is a method of distributing large amounts of data widely without the original distributor incurring the entire costs of hardware, hosting and bandwidth resources. Instead, when data is distributed using the BitTorrent protocol, each recipient supplies pieces of the data to newer recipients, reducing the cost and burden on any given individual source, providing redundancy against system problems, and reducing dependence on the original distributor. For more information on BitTorrent, visit [www.BitTorrent.com](http://www.BitTorrent.com)

## 2.5 System Maintenance

The controls for System Maintenance services are accessible by selecting “Maintenance” menu from the Control Panel. In this section you can access disk error checking, mounting/dismounting disks, access RAID controls, update the MegaDisk NAS firmware, save and restore system configuration, and reset the MegaDisk NAS to factory settings.

### 2.5.1 Disk Utility

The disk utility allows you to manage your disks (excluding RAIDsets.) You may format or change file systems, mount USB disks, check SMART status, and perform disk error checking (Scandisk.) To access the disk utilities, navigate to “Control Panel” -> “Maintenance” -> “Disk Utility”.



**Note:** Most disk functions will not be available for RAID member disks.

2.5.1.1 To check disks for errors click on the “**Scan**” button in the Scandisk box of the respective disk to check. A confirmation dialog will appear and the disk check will commence. Please wait for the scan to complete before attempting any other operation. Once complete, a dialog will appear informing you of the disk scan results.

Disk Utility							
Device Name	Type	Mount Point	Status	Encrypt/Password/Format Type/Format	Scandisk	Umount	Health
/dev/hdd	none		unmount	<input type="checkbox"/> encrypt ext2 Format	Scan	Umount	PASSED Detail
/dev/hdc	none		unmount	<input type="checkbox"/> encrypt ext2 Format	Scan	Umount	PASSED Detail
Refresh							

2.5.1.2 To format or reformat a disk, Select the file system desired (EXT2/3 or FAT32) in the “Encrypt Password/Format Type” cell respective to the disk. To encrypt the file system (EXT2/3 only) check the encrypt box. To begin the operation, click on the “**Format**” button. A confirmation dialog will appear and the disk check will commence. The status of the operation will display in the “Status” cell. Please wait for the format to complete before attempting any other operation. Once complete, a dialog will appear to confirm the operation.



2.5.1.3 The MegaDisk NAS will routinely perform S.M.A.R.T. tests to ensure the health of the disks. The resulting pass or fail will display in the “Health” cell next to its respective disk. To see the detailed results of the latest SMART test, click the “Detail” button.



**Note:** S.M.A.R.T, or Self-Monitoring, Analysis, and Reporting Technology is a monitoring system for computer hard disks to detect and report on various indicators of reliability.

2.5.1.4 Disk Power Saving can be set by entering a value in minutes in the “Disk Spin Down Time:” Entry box, or enter “0” to disable. Click the “Save” button to commit.

Disk spin down time: 5 Minute

Save

## 2.5.2 RAID Utility

The RAID utility allows you to manage your RAIDsets. You may create, erase, format or change file systems, mount USB disks, check SMART status, and perform disk error checking (Scandisk.) To access the disk utilities, navigate to “Control Panel” -> “Maintenance” -> “RAID Utility”. The current RAIDset (if exists) will display, along with RAID level, file system, total size and free space. To create or change a RAIDset, the disks must first be erased. Click on the “Remove system data” button. A confirmation dialog will appear, and following confirmation the disks will be erased and the MegaDisk NAS will be restarted. Please allow approximately 2 minutes for the reboot process to complete. Re-log into the administration GUI and return to the RAID utility. Select the desired RAID level (0, 1, or span) and file system (EXT2 or 3.) Click “Create raid system” to begin the RAID creation process. A confirmation dialog will appear and the process will commence. Once the RAID creation is complete, the MegaDisk NAS will be restarted. Please allow approximately 2 minutes for the reboot process to complete. Please note that the MegaDisk NAS’ netbios name will revert to “GForceNAS” following the RAID creation.



**IMPORTANT:** if the disks are reformatted or RAID level is changed, the MegaDisk NAS will revert to its factory Netbios name “GForceNAS.” Please note that you will need to change the Netbios name back to your setting before attempting to access it.

### RAID Setting

Raid level: ☒ RAID 0

☐ RAID 1

☐ Linear

File system: ☐ EXT2

☒ EXT3

Create raid system

Disk status:

Raid system is not exist.



/dev/hdc  
MDT  
MD1200JS-00MVB1  
120 GBytes

/dev/hdd  
MDT  
MD1200JS-00MHB0  
120 GBytes

## 2.5.3 Update Firmware

Fantom Drives strives to continually improve and from time to time will release firmware updates for the MegaDisk NAS. Firmware will either be made available on Fantom Drives’s website or provided by Fantom Drives Technical Support. To access the Firmware Upgrade, navigate to “Control Panel” -> “Maintenance” -> “Firmware Upgrade”. Click the “Browse...” button next to the Firmware entry box. Navigate and select your saved settings file. Click “Start Upgrade” to begin the upload, and confirm the operation in the following confirmation dialog.

### Firmware Upgrade

Current Firmware Version

2.6.1-n

Upgrade File

Browse...


Start Upgrade





**IMPORTANT:** Make sure all user data and system settings are backed up before updating firmware!

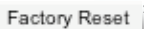
## 2.5.4 Save/Restore Configuration


When all configuration options for the MegaDisk NAS are entered and the unit is functioning correctly, It is recommended that you save your system settings to a settings file for safekeeping. Should the MegaDisk NAS ever have to be reformatted or reset, you will then be able to retrieve all your settings, users, groups, and permissions from this file.

2.5.4.1 To save current settings to a file, navigate to “Control Panel” -> “Maintenance” -> “Save Configuration.” Click the “ Save” Button. The configuration file will download to your computer.

2.5.4.2 To retrieve an existing settings file, navigate to “Control Panel” -> “Maintenance” -> “Restore Configuration.” Click the “ Browse...” button next to the Upload entry box. Navigate and select your saved settings file. Click “ Restore” to retrieve the settings, and confirm the operation in the following confirmation dialog.

## 2.5.5 Reset to Factory Default


Should it become necessary to reset all settings to factory default, access the Reset to Factory Settings screen from “Control Panel” -> “Maintenance” -> “Factory Reset” Click the “ Factory Reset” Button to reset the unit, and confirm the operation in the following confirmation dialog.


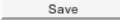

 **WARNING:** Resetting to factory default may result in data loss!

## 2.6 Display System Logs

The MegaDisk NAS system logs are viewable by navigating to “Control Panel” -> “Log Files”. The MegaDisk NAS keeps logs for the SAMBA (Windows File Server), FTP, DHCP Server, System Log, and Administration Access.

## 2.7 Administrator Account Info

To change the administrator password, navigate to “Personal Info ” -> “Account” and the Administrator Information screen appears. Enter the new password in the “New Password” field, and re-enter the password (case sensitive) in the “Confirm Password” field. You may also specify default user interface language, and enter a description (such as location or phone extension.) When all fields are entered, click the “ Save” Button to confirm.

Account Information - admin	
Change Password	<input type="password"/> <input type="password"/> (Confirm)
Language Preference	English 
Description (Optional)	John Doe Ext 123
Quota	1
Disk Usage	Used 0.00MB
Percentage	-
Share List	public (Writable) ===== END LIST =====
 	

## 2.8 Logout

To ensure that no unauthorized access to the system administration occurs, Fantom Drives recommends you log out of the user interface when not in use. To log out, click on the “Logout” button at the top right of the administrative interface, and confirm at the confirmation dialog.



## Chapter 4- Connecting Users

Once the MegaDisk NAS has been configured with storage, shares, users, groups, and permissions, It is ready to accept user connections. The MegaDisk NAS supports SMB/CIFS network services as well as FTP user connections. This chapter includes discussion on the SMB/CIFS connection method. For more information on accessing the MegaDisk NAS via FTP, consult your ftp client documentation.

### 1. SMB/CIFS User Access Configuration

SMB shares are accessible from Windows 95 and newer, OS-X 10.2 and newer, and most Unix/Linux based workstations. Instructions are included for Windows and Macintosh based hosts. \*nix users should consult the specific distribution and/or SAMBA documentation for usage instruction.

#### 1.1 Mapping a Network Drive (Windows)

To access the MegaDisk NAS from a Windows based user, Open “My Network Places” (Windows XP) or “Network Neighborhood” on Windows 98/2000. The MegaDisk NAS is called “GForceNAS” In workgroup “Workgroup” by default. Double click to see the available shares. Alternatively, you may use Window’s search function to look for computers named “GForceNAS”.

You can map share folders on the MegaDisk NAS so you can access them through the My Computer folder in Windows. Connect to the shared network folders on the MegaDisk NAS as follows:

##### 1.1.1 Double click “My Computer”

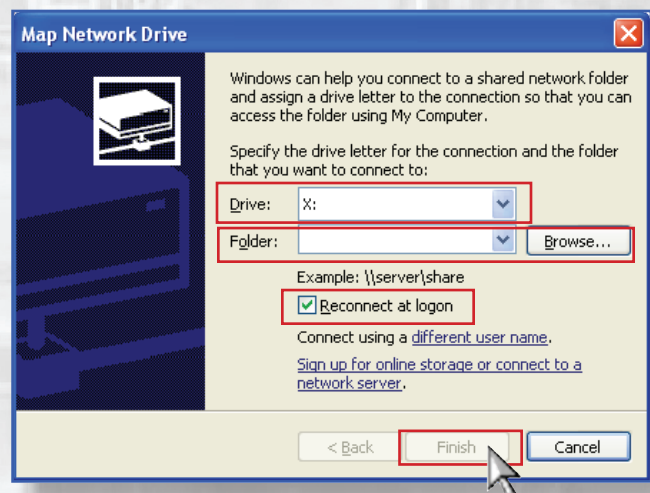
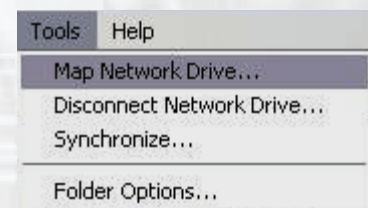
##### 1.1.2 In the menu bar, select “Tools” -> “Map Network Drive”

##### 1.1.3 The Map Network Drive... window appears.

- Select the desired drive letter in the “Drive” field
- Use the Browse button to find the folder over your network, or enter the share manually as “\\[MegaDisk NAS]\\[sharename]” where [MegaDisk NAS] is the name or IP address of the MegaDisk NAS, and [sharename] is a specific share being mapped.
- Check the “Reconnect at Logon” checkbox to make the share reconnect on reboot.
- Click Finish. If the share is not public, a Connect As... window appears. Enter an authorized User name and Password.

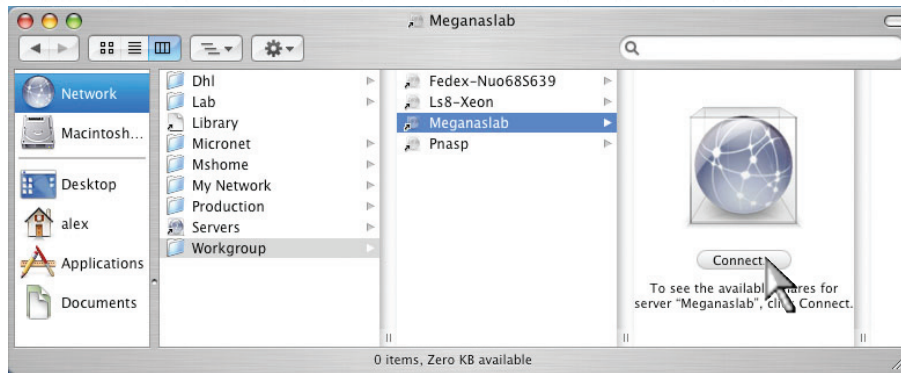


- Click OK. The share folder appears as the drive you assigned in your My Computer window. You can now access this folder as though it were a drive on your computer.



## 1.2 Mapping a Network Drive (OS-X)

The simplest method to locate and connect your MegaDisk NAS to an OS-X workstation is by using the Finder Network browser.




If you can't locate the computer or server within the network browser, you may be able to find it by typing its network address in the Connect to Server dialog, accessible from the "Go" -> "Connect to Server" Finder menu option. In the server address field, enter "smb://[GForceNAS]/[sharename]" where [GForceNAS] is the name or IP address of the MegaDisk NAS, and [sharename] is a specific share being mapped, and click the "Connect" button.

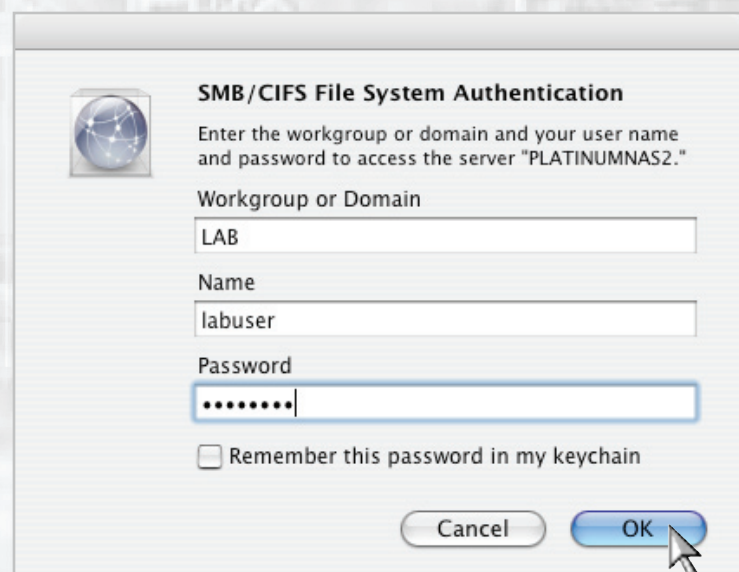
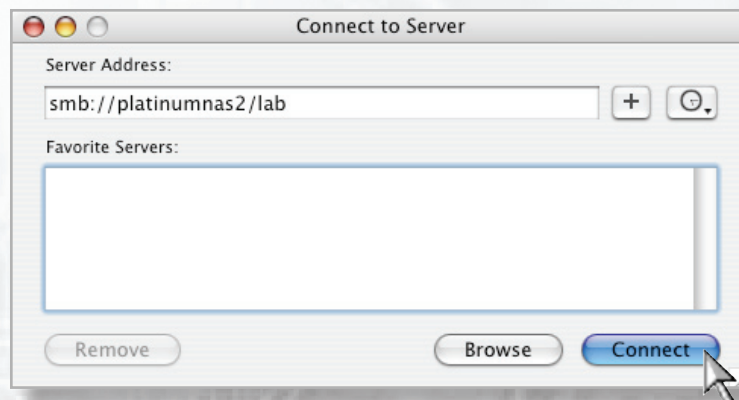
If the share is not public, a "SMB/CIFS File System Authentication" window appears. Enter an authorized User name and Password, and click the "OK" button.

Select a share and click OK. The selected share will appear on your desktop.

## 2. Adding USB Devices

The MegaDisk NAS has two USB ports for attaching external USB printers and disks such as the Phantom Drives Titanium2 and G-Force MegaDisk lines of products, formatted in FAT32, EXT2/3, or NTFS. Mounted USB disks will appear as available shares of the MegaDisk NAS.

 **Note:** NTFS volumes will be available in read only mode.





## 3. Connecting to the shared printer

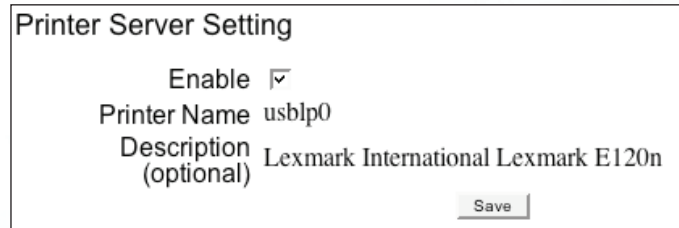
The MegaDisk NAS supports sharing of a wide selection of USB printers. The following instructions will help you to connect to the networked USB printer

### 3.1 Printer Installation on Windows hosts

The following instructions are based on printer installation on a Windows XP based host. Other Windows hosts are configured similarly.

3.1.1 Power on and connect your USB printer in to your MegaDisk NAS.

3.1.2 The MegaDisk NAS will automatically detect a USB printer attached. Navigate to “Control Panel” -> “File and Print” -> “Printer Server,” note the make and model of the printer, and verify that the “Enable” box in the print server dialog is checked.

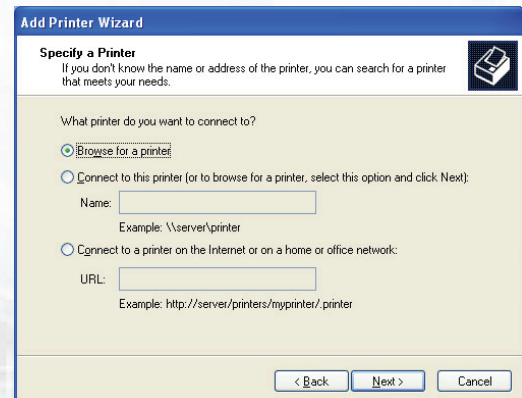


3.1.3 Obtain and install your printer's driver appropriate to your computer.

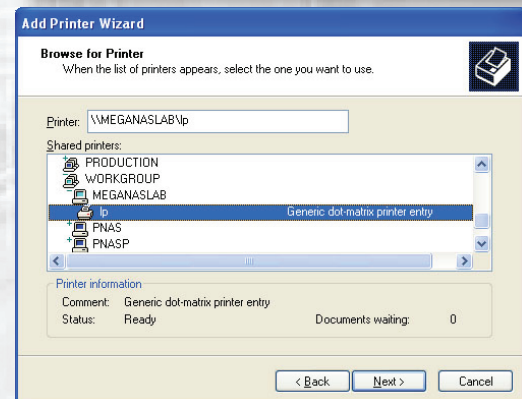
3.1.4 Begin the “Add a Printer” wizard accessible from “Start” -> “Setting” -> “Printer and Faxes” -> “Add a printer”.

3.1.5 Select “A network printer or printer attached to another computer”, then Click “Next”.

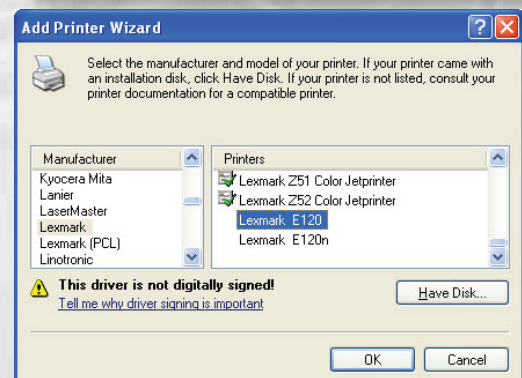
3.1.6 Select “Browse for a printer” than Click “Next”.



3.1.7 Navigate to the MegaDisk NAS on your network. The printer will appear named “lp” and be described as a generic printer. Click “Next” and permit the action at the following Windows security warning dialogs (if applicable.)



3.1.8 Windows will inform you that it cannot find the appropriate driver for the printer, and will prompt you to choose a driver. Select the driver you installed previously, and select “Have Disk” to manually choose a new printer driver. Click “OK” to complete the installation. The printer is ready to use.



## 3.2 Printer Installation on Mac OS X hosts

The following instructions are based on printer installation on a Mac OS X 10.4 based host. Other Mac OS X hosts are configured similarly.

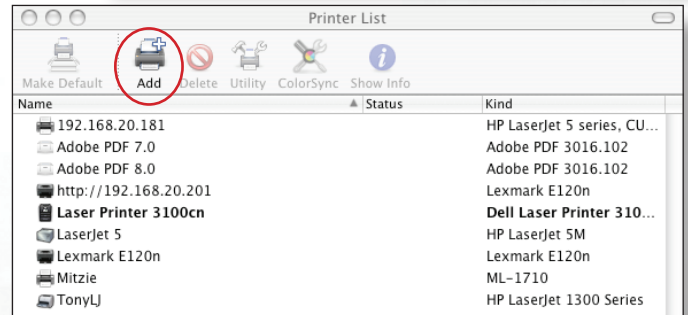
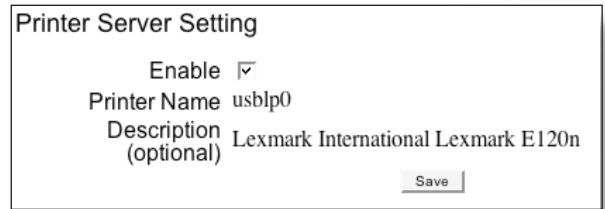
3.2.1 Power on and connect your USB printer in to your MegaDisk NAS.

3.2.2 The MegaDisk NAS will automatically detect a USB printer attached. Navigate to “Control Panel” -> “File and Print” -> “Printer Server,” note the make and model of the printer, and verify that the “Enable” box in the print server dialog is checked.

3.2.3 Obtain and install your printer’s driver appropriate to your computer.

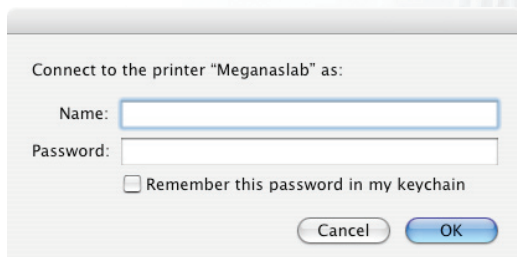
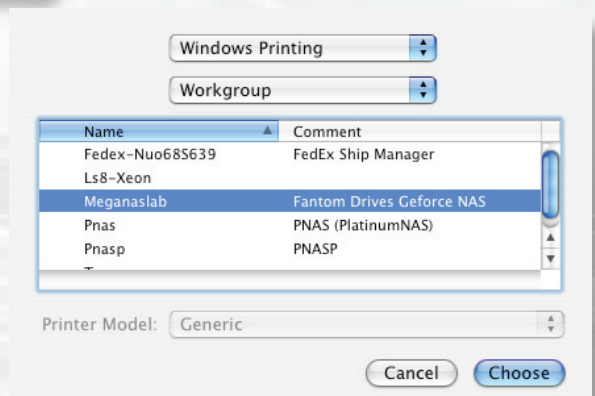
3.2.4 Launch the Printer Setup Utility (located in / Applications/Utilities/Printer Setup Utility.app)

3.2.5 Click the “Add” button (illustrated right.)

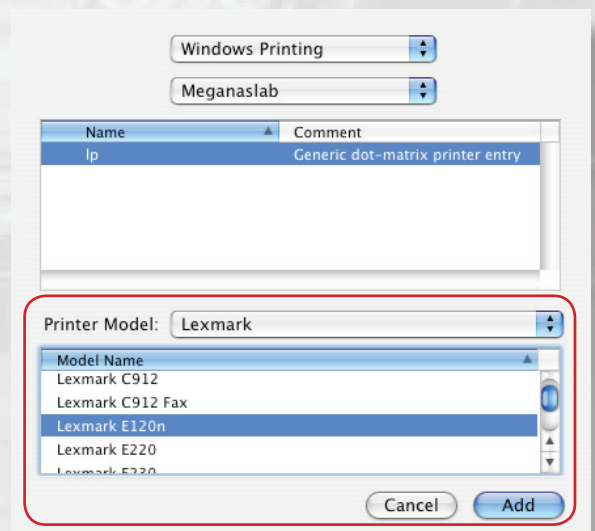


3.2.6 In the Printer Browser that follows, click “More Printers...”

3.2.7 Select “Windows Printing” in the sharing type pulldown (top) and navigate to the correct workgroup in the Network Neighborhood pulldown (2nd from top.) Select your MegaDisk NAS from the resulting list of available hosts and click “Choose”. You will be prompted to enter your security credentials. Enter the username and password created in section 3.1.



3.2.8 The printer will appear named “lp” and be described as a generic printer. Select the printer make and model in section illustrated right. If the printer driver does not appear in the drop down list, consult the documentation for the printer driver for more information. Click “Add” to complete the installation. The printer is ready to use.





## Chapter 5- Troubleshooting

### Daily Use Tips

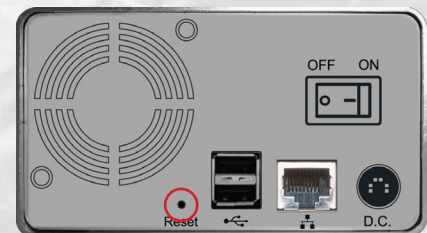
- Read this User's Guide carefully. Follow the correct procedure when setting up the device.
- Additional application software may have been included with your drive. Please review the documentation included with this software for information on the operation and support of this software. The documentation can usually be found in an electronic format on the included CD.
- Always operate your drive on a steady, level surface. Do not move the unit while it is turned on.
- Plug your drive into a grounded electrical outlet. The use of "ground-defeating" adapters will cause damage not covered by your warranty.
- Do not open your MegaDisk NAS or attempt to disassemble or modify it. Never insert any metallic object into the drive to avoid any risk of electrical shock, fire, short-circuiting or dangerous emissions. If it appears to be malfunctioning, please contact Fantom Drives Support.
- Do not power off the MegaDisk NAS from the power button, as it may cause data loss. To make sure no writes are in progress, perform a soft shutdown (see Chapter 3, Section 2.3.3) before turning off the unit.

### General Use Precautions

- Do not expose the MegaDisk NAS to temperatures outside the range of 5°C (41°F) to 45°C (104°F). Doing so may damage the drive or disfigure its casing. Avoid placing your drive near a source of heat or exposing it to sunlight (even through a window.)
- Never expose your device to rain, or use it near water, or in damp or wet conditions. Doing so increases the risk of electrical shock, short-circuiting, fire or personal injury.
- Always unplug the hard drive from the electrical outlet if there is a risk of lightning or if it will be unused for an extended period of time.
- Don't place the drive near sources of magnetic interference, such as computer displays, televisions or speakers. Magnetic interference can affect the operation and stability of your MegaDisk NAS.
- Do not place heavy objects on top of the drive or use excessive force on it.
- Never use benzene, paint thinners, detergent or other chemical products to clean the outside of the MegaDisk NAS. Instead, use a soft, dry cloth to wipe the device.

### Resetting the MegaDisk NAS

Should the MegaDisk NAS become inaccessible (activity or disk lights dark, forgotten password) or if directed by Fantom Drives support, please reset the MegaDisk NAS to factory default as follows: with the MegaDisk NAS powered on, press and hold the reset button (circled right) using a paper clip for about 10 seconds. Power off the unit and then back on to complete the reset.



## Frequently Asked Questions

Q: I Forgot the Network IP Address or Password

A: If you forget your network IP address or your password, you can reset the MegaDisk NAS to its default settings. Please see “Resetting your MegaDisk NAS” in the troubleshooting section.

Q: What is the warranty period for MegaDisk NAS?

A: MegaDisk NAS standard warranty is one year limited. Optional extended warranty and overnight exchange programs are available, consult your Fantom Drives dealer or visit [www.FantomDrives.com](http://www.FantomDrives.com) for additional information.

Q: I have my MegaDisk NAS configured as a RAID 1, which means it can sustain a disk failure. This means I don't need to worry about backing up my data, right?

A: Although RAID 1 does provide tolerance for disk failure, it does not prevent damage due to fire, flood, or other types of disaster, nor can it prevent virus damage or accidental deletion. **ALWAYS BACK UP YOUR DATA.**

Q: When I try to copy a large file I get an error saying there is not enough room on the drive-- I have lots of free space!

A: Check the MegaDisk NAS file system for the share you are using. FAT32 only allows files up to 4GB in size. To copy larger files, please split the file into multiple segments, or consider reformatting the volume to EXT2/3.

Q: When I try to access the Fantom Drives MegaDisk NAS on the network, it takes a long time to show up.

A: The MegaDisk NAS may be set to power saving mode, and the disk drive is put to sleep when not in use, and the drive has to spin up only when accessed. If you require the MegaDisk NAS to be more immediately accessible, consider setting a longer idle period under power saving control or turn it off altogether.

Q: I bought a 500GB drive, but my computer is showing 465GB. Where is the missing capacity?

A: Hard drive manufacturers market drives in terms of decimal (base 10) capacity. In decimal notation, one megabyte (MB) is equal to 1,000,000 bytes, and one Gigabyte (GB) is equal to 1,000,000,000 bytes. Many operating systems use the binary (base 2) numbering system to describe disk capacity; In the binary numbering system, one megabyte is equal to 1,048,576 bytes, and one gigabyte is equal to 1,073,741,824 bytes. Simply put, decimal and binary translates to the same amount of storage capacity.

Q: I have a Mac, and I'm trying to copy files to the MegaDisk NAS but it keeps failing.

A: Check the file system for the share you are using. The FAT32 format allow different standards of filename length or use of special characters. Rename the offending file(s) and try the operation again, or consider reformatting the volume to EXT2/3.

Q: I'm trying to connect to the MegaDisk via FTP, but the connection is timing out. I'm using IE 6.

A: Internet Explorer may be blocking your FTP access. To enable FTP access in Internet Explorer, navigate to “Tools” -> “Internet Options” in IE. Uncheck “Enable folder view for FTP site” and click “OK.”

If an issue cannot be resolved by using our FAQ, please contact Technical Support via the Fantom Drives support site at <http://www.FantomDrives.com/help>



## Appendix A: Getting Help

If you experience problems with your Fantom Drives MegaDisk NAS, please contact your Authorized Fantom Drives reseller for assistance. If the reseller is unable to resolve your issue, please contact Fantom Drives' Help Desk for assistance. Please have the model, serial number, date of purchase, and reseller's name available before contacting the help desk. If possible, call from a telephone near the system so we can direct you in any necessary system corrections.

### How to contact Fantom Drives

Fantom Drives  
19260 Van Ness Avenue  
Torrance, CA 90501  
<http://www.FantomDrives.com>

(310) 320-7272 Sales  
(310) 328-0202 Sales Fax  
(800) 322-8581 Help Desk & Customer Service (Outside the US: 310-320-0772)

MicroNet Technology can also be reached via email at the following addresses:

Sales: [sales@FantomDrives.com](mailto:sales@FantomDrives.com)

Help Desk: [support@FantomDrives.com](mailto:support@FantomDrives.com)

## Appendix B: Glossary

**ATA** Acronym for “**AT Bus Attachment**” - a standard interface to IDE hard disks. Western Digital’s IDE disk interface was standardized by ANSI to form the ATA specification using a 16-bit ISA bus.

**Cache** a fast-access memory bank that serves as an intermediate storage for data that is read from or written to secondary storage. Typically, high-speed caches are implemented in RAM, though they can also be implemented on disk when speed is not a critical requirement. Caches generally improve the efficiency of read operations due to the principles of “spatial and temporal locality of data”. They can also improve the efficiency of write operations.

**Common Internet File System (CIFS)** a network protocol for sharing files, printers, serial ports, and other communications between computers. CIFS is based on the widely-used SMB protocol.

**Degraded Mode/Status** All arrays, with the exception of **RAID 0**, are designed to handle disk failures. However, there is limit on the number of hard disks that can fail before the array is rendered inoperative. For instance, this limit value is 1 for **RAID 1**, 3, and 5. In the case of **RAID 10** or 50, the upper bound is equal to the number of parity groups. When the number of disk failures occurring in an array are less than or equal to this upper bound, the array is denoted to be in a degraded state. The failure of the disks does not impair reading from or writing to the array. However, it impairs the efficiency of throughput in all RAID types (with the exception of RAID 1) since data requested by read operations may have to be “reconstructed” using parity. In the case of RAID 1 the throughput of read operations is cut in half if a drive fails. Operating in degraded mode is considered an acceptable alternative only for short durations. Generally this duration should span no more time than that required to inform the user of the failures and to replace the failed disks with suitable spares.

**Device Driver** A piece of software that controls a hardware device. Typically drivers provide an interface by which applications can use the device in a uniform and hardware-independent manner.

**Dirty Data** Dirty data is data that has been written to a cache but has not been “flushed,” or written to its final destination, typically some secondary storage device.

**Disk Array** A Disk Array is a logical disk comprised of multiple physical hard disks. The number of hard disks in an disk array is dictated by the type of the array and the number of spares that may be assigned to it. Furthermore, whether a disk array can be built using part of the space on a disk (as opposed to being forced to use the whole disk) depends upon the implementation. Disk Arrays are typically used to provide data redundancy and/or enhanced I/O performance.

**Disk Block** Data is stored on disks in blocks that are generally of a predefined size. This size is typically a value such as 512 bytes, 1 KB, 2 KB, etc. When a record is written to a disk, the blocks used for that record are dedicated to storing the data for that record only. In other words two records are not permitted to share a block. Consequently, a block may be only partially used. For instance, assume a disk has a block size of 1 KB and a user record written to it has a size of 3148 bytes. This implies that the user record will be written into 4 blocks, with the contents of one of the blocks being only partially filled with (3148 – 3072) 76 bytes of data.



**DNS (Domain Name Server)** A system that stores information associated with domain names in a distributed database on networks, such as the Internet. The domain name system (domain name server) associates many types of information with domain names, but most importantly, it provides the IP address associated with the domain name. It also lists mail exchange servers accepting e-mail for each domain. In providing a worldwide keyword-based redirection service, DNS is an essential component of contemporary Internet use.

**Dynamic Host Configuration Protocol (DHCP)** a client-server networking protocol. A DHCP server provides configuration parameters specific to the DHCP client host requesting, generally, information required by the client host to participate on an IP network. DHCP also provides a mechanism for allocation of IP addresses to client hosts. DHCP emerged as a standard protocol in October 1993.

**Ethernet** A local-area network standard that is currently the most prevalent with an estimated 80% of desktops connected using this standard. It was developed jointly by Xerox, DEC and Intel and employs a bus or star topology.

**EXT2 File System** or second extended file system is a file system for the Linux kernel. It was initially designed by Rémy Card as a replacement for the extended file system (ext). It is fast enough that it is used as the benchmarking standard. Although ext2 is not a journaling file system, its successor, ext3, provides journaling and is almost completely compatible with ext2.

**EXT3 File System** or third extended filesystem is a journalled file system that is commonly used by the Linux operating system. It is the default file system for many popular Linux distributions. Stephen Tweedie first revealed that he was working on extending ext2 in a February 1999 kernel mailing list posting and the filesystem was merged with the mainline kernel from 2.4.15 onward.

**File System** A file system is a layer between applications and the disks to which their I/O is directed. File systems serve to hide the details of the physical layout of files on the disk, allowing applications to address files as a contiguous logical area on disk accessible by a name regardless of their physical location on the storage device.

**FTP (File Transfer Protocol)** is a commonly used, open standard protocol for exchanging files over any network that supports the TCP/IP protocol (such as the Internet or an intranet). Virtually every computer platform supports the FTP protocol. This allows any computer connected to a TCP/IP based network to manipulate files on another computer on that network regardless of which operating systems are involved (if the computers permit FTP access.) There are many existing FTP client and server programs, and many of these are free.

**Local Area Network (LAN)** a computer network covering a small geographic area, like a home, office, or group of buildings. Modern LANs typically employ ethernet for connection technology.

**Logical Drive** A logical drive is comprised of spaces from one or more physical disks and presented to the operating system as if it were one disk.

**MAC (Media Access Control) Address** In computer networking a Media Access Control address (MAC address) is a unique identifier attached to most forms of networking equipment. All Ethernet devices have unique MAC addresses.

**NAS (Network Attached Storage)** a file-level data storage connected to a computer network providing data access to heterogeneous network clients.

**Network File System (NFS)** is a network file system protocol originally developed by Sun Microsystems in 1984, allowing a user on a client computer to access files over a network as easily as if the network devices were attached to its local disks. It is commonly used by various UNIX and compatible host platforms.

**NTFS (NT File System)** the standard file system of Windows NT, including its later versions Windows 2000, Windows XP, Windows Server 2003, Windows Server 2008, and Windows Vista.

**Partition** the creation of logical division upon a physical or logical disk that allows one to apply operating system-specific logical formatting.

**Performance** An important criterion on which a customer judges disk storage. Computer storage performance is measured in terms of latency and/or throughput. Latency describes the time it takes to access a particular location in storage. The relevant unit of measurement is typically nanosecond for primary storage, millisecond for secondary storage, and second for tertiary storage. It may make sense to separate read latency and write latency, and in case of sequential access storage, minimum, maximum and average latency. Latency is most important when dealing with large numbers of small files. Throughput is the rate at which information can be read from or written to the storage. In computer storage, throughput is usually expressed in terms of megabytes per second or MB/s, though bit rate may also be used. As with latency, read rate and write rate may need to be differentiated. Throughput is most important when dealing with large sequential data.

**Physical Disk Drive** A single tangible drive.

**RAID** Abbreviation of Redundant array of independent disks. It is a set of disk array architectures that provides fault-tolerance and improved performance. RAID schemes are commonly referred to by a RAID scheme number such RAID0, RAID1, etc.

**RAID Set** the combining of multiple physical disk drives into a single virtual disk.

**RAID 0** RAID 0 utilizes simple striping, with the data being distributed across two or more disks. No data redundancy is provided. The figure below illustrates a purely hypothetical RAID 0 array comprised of three disks – disks A, B, and C – with four stripes – each uniquely colored – across those disks. **Advantage:** Striping can improve the I/O throughput by allowing concurrent I/O operations to be performed on multiple disks comprising the RAID 0 array. However, this RAID type does not provide any data redundancy.

**RAID 1** An array that uses a single pair of disks. Both disks in the pair contain the same data. It provides the best data protection but at a cost of half the storage. RAID 1 ensures that if one of the disks fails, its contents are available for access from the duplicate disk. Furthermore, a RAID 1 array can also improve the throughput of read operations by allowing separate reads to be performed concurrently on the two disks.



**RAID 10** A RAID 10 array is formed using a two-layer hierarchy of RAID types. At the lowest level of the hierarchy are a set of RAID 1 arrays i.e., mirrored sets. These RAID 1 arrays in turn are then striped to form a RAID 0 array at the upper level of the hierarchy. The collective result is a RAID 10 array. The figure below demonstrates a RAID 10 comprised of two RAID 1 arrays at the lower level of the hierarchy – arrays A and B. These two arrays in turn are striped using 4 stripes (comprised of the strips 1A, 1B, 2A, 2B etc.) to form a RAID 0 at the upper level of the hierarchy. The result is a RAID 10. **Advantage:** RAID 10 ensures that if one of the disks in any parity group fails, its contents can be extracted using the information on the remaining functioning disks in its parity group. Thus it offers better data redundancy than the simple RAID types such as RAID 1, 3, and 5. Also, a RAID 10 array can improve the throughput of read operations by allowing reads to be performed concurrently on multiple disks in the set.

**RAID Rebuild** When a RAID array enters into a degraded mode, it is advisable to rebuild the array and return it to its original configuration (in terms of the number and state of working disks) to ensure against operation in degraded mode.

**SATA** Acronym for “**Serial ATA**”. A hard disk drive interface standard developed to enhance connectivity and speed over the IDE, or Parallel ATA disk interface. Current generation SATAII supports speeds up to 300MB/S.

**Server Message Block (SMB)** a network protocol mainly applied to share files, printers, serial ports, and miscellaneous communications between nodes on a network. It also provides an authenticated Inter-process communication mechanism. SMB and its successor, CIFS, are the native network protocol used by the Microsoft Windows family, and is also used by Apple MacOS X and is available for virtually every UNIX and Linux operating system.

**Span** Spanning or Concatenation of disks is a method for combining multiple physical disk drives into a single virtual disk, although it is not one of the numbered RAID levels. It provides no data redundancy; as the name implies, disks are merely concatenated together, end to beginning, so they appear to be a single large disk. This mode is sometimes called JBOD, or “Just a Bunch Of Disks”

**Stripe** A stripe is a logical space that spans across multiple hard disks with each constituent hard disk contributing equal strips (or chunks) of space to the stripe.

**Stripe Set** A stripe set is a set of stripes that spans across multiple hard disks. In the figure below, the displayed stripe set has 4 stripes, with strip number 1 comprised of the purple strips 1A, 1B and 1C. Stripe number 2 is comprised of the green strips 2A, 2B and 2C etc.

**Stripe Size** This is the size of the strips that constitute each stripe. This term is a misnomer – though prevalent – since it should appropriately be called strip size or chunk size.

**TCP/IP (Transmission Control Protocol/Internet Protocol)** A pair of communications protocols that implement the protocol stack on which the Internet and most commercial networks run. TCP is a peer-to-peer connection oriented protocol that guarantees the delivery of data packets in the correct sequence between two peers. IP is the protocol that defines and governs addressing, fragmentation, reassembly and time-to-live parameters for packets.

**Universal Plug and Play (UPnP)** a set of computer network protocols promulgated by the UPnP Forum. The goals of UPnP are to allow devices to connect seamlessly and to simplify the implementation of networks in the home (data sharing, communications, and entertainment) and corporate environments. UPnP achieves this by defining and publishing UPnP device control protocols built upon open, Internet-based communication standards.

**Windows Internet Naming Service (WINS)** is Microsoft's implementation of NetBIOS Name Server (NBNS) on Windows, a name server and service for NetBIOS computer names. Effectively, it is to NetBIOS names what DNS is to domain names - a central store for information. However the stores of information have always been automatically (e.g. at workstation boot) dynamically updated so that when a client needs to contact a computer on the network it can get its update normally DHCP allocated address. Networks normally have more than one WINS server and each WINS server should be in push pull replication, the favoured replication model is the HUB and SPOKE, and thus the WINS design is not central but distributed, each WINS server holds a full copy of every other related WINS system records. There is no hierarchy in WINS (unlike DNS) but like DNS its database can be queried for the address to contact rather than broadcasting a request for which address to contact. The system therefore reduces broadcast traffic on the network, however replication traffic can add to WAN / LAN traffic.





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