

NSA-2400

Network Storage Appliance

User's Guide

Version 1.00

6/2006

Edition 1

The logo for ZyXEL, featuring the word "ZyXEL" in a bold, blue, sans-serif font. The "Zy" is in a slightly larger font size than "XEL".

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Notice 1

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Registration

Register your product online to receive e-mail notices of firmware upgrades and information at www.zyxel.com for global products, or at www.us.zyxel.com for North American products.

Customer Support

Please have the following information ready when you contact customer support.

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it. .

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“+” is the (prefix) number you enter to make an international telephone call.

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Preface

Congratulations on your purchase of the NSA-2400 Network Storage Appliance. The NSA-2400 (“the NSA”) is a network storage device for file sharing, data backup and data protection in small (home) offices and/or medium-sized offices.

About This User's Guide

This manual is designed to show you how to use the web configurator to configure the NSA. Each new section begins with feature background information leading to a screen configuration description table. The appendices contain advanced related feature background information.

Related Documentation

- Installation Disk

Refer to this CD for the:

- NDU (NSA Discovery Utility)
- NSA documentation
- Genie Backup Manager utility and documentation.

- Quick Start Guide

The Quick Start Guide is designed to help you get up and running as quickly as possible. It shows you how to make the hardware connections, introduces the NDU, and describes how to access the NSA web configurator.

- Web Configurator Online Help

Click the ‘?’ icon to view screen related help and background feature information.

- ZyXEL Web Site

Please go to <http://www.zyxel.com> for product news, firmware, updated documents, and other support materials.

User Guide Feedback

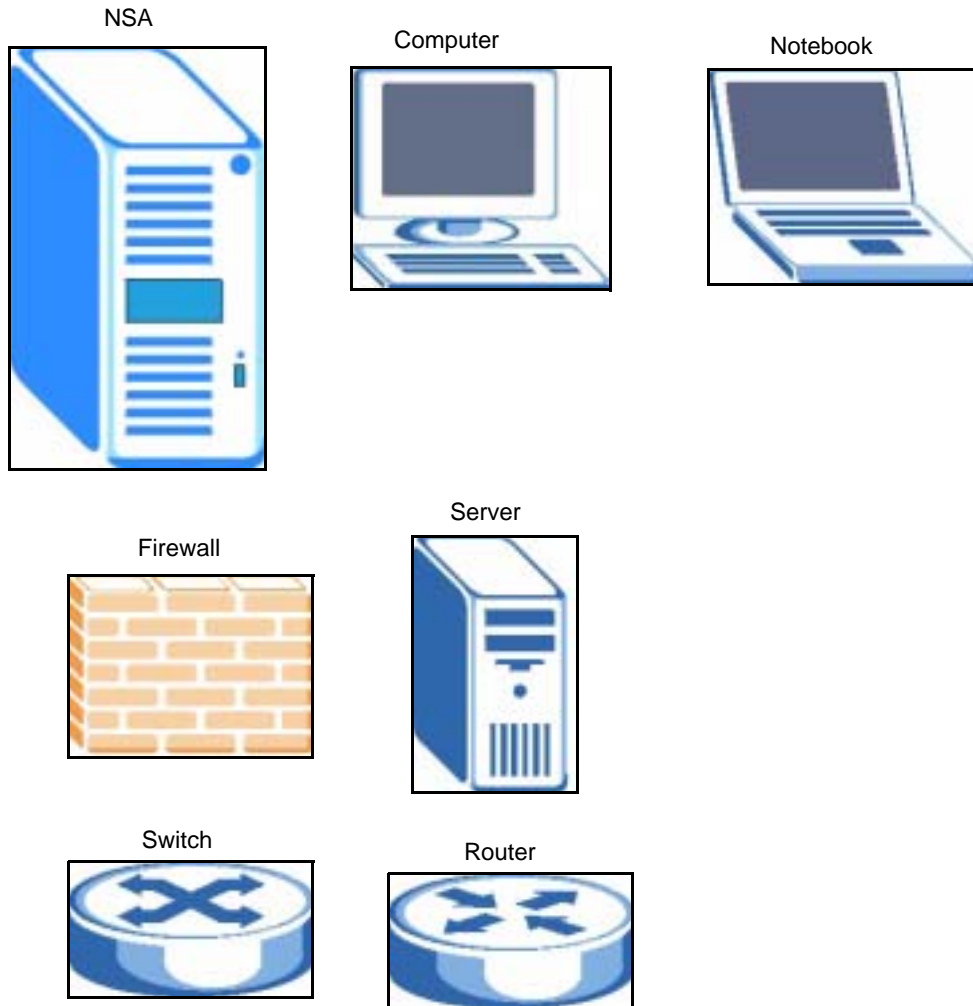
Help us help you. E-mail all User Guide-related comments, questions or suggestions for improvement to techwriters@zyxel.com.tw or send regular mail to The Technical Writing Team, ZyXEL Communications Corp., 6 Innovation Road II, Science-Based Industrial Park, Hsinchu, 300, Taiwan. Thank you!

Syntax Conventions

- In this guide we use ‘you’ to refer to the NSA administrator and ‘user’ to refer to people who can store and transfer files to/from the NSA.
- “Enter” means for you to type one or more characters. “Select” or “Choose” means for you to use one predefined choice.

- Mouse action sequences are denoted using a right angle bracket (>). For example, “In Windows, click **Start** > **Settings** > **Control Panel**” means first click the **Start** button, then point your mouse pointer to **Settings** and then click **Control Panel**.
- “e.g.,” is a shorthand for “for instance,” and “i.e.,” means “that is” or “in other words”.

Graphics Icons Key



CHAPTER 1

Getting to Know Your NSA

This chapter introduces the main features and applications of the NSA (Network Storage Appliance).

Note: Snapshot and RAID 0 are not supported by the NSA in the first release, but they are included here as they will be supported in a later release.

1.1 NSA Overview

An NSA is an optimized system for storing and sharing data. The NSA-2400 has its own operating system, integrated hardware and software, and connects directly to your network to provide file-level access to data.

It supports SATA-1 compatible (Serial Advanced Technology Attachment) hard disk serial links, and RAID (Redundant Array of Independent Disks) file storage systems. If configured in fault-tolerant RAID 1 or 5 mode, your data is still protected even if one hard disk fails.

You can also expand capacity by attaching compatible USB (version 2) drives to the USB ports.

The appliance also comes with a Gigabit Ethernet port to ensure maximum-speed file access and backup over your network.

See the appendices for a detailed list of product specifications.

Figure 1 NSA-2400



1.2 NSA Features

This section lists the main physical and firmware features of the NSA.

1.2.1 Physical Features

These are the main external physical features.

Gigabit Ethernet Port

The 10/100/1000 Mbps auto-negotiating Ethernet port allows the NSA to detect the speed of incoming transmissions and adjust appropriately without manual intervention. It allows data transfer of either 100 Mbps or 1000 Mbps in either half-duplex or full-duplex mode depending on your Ethernet network. Use an 8-wire Ethernet cable for Gigabit connections. The port is also auto-crossover (MDI/MDI-X) meaning it automatically adjusts to either a crossover or straight-through Ethernet cable.

USB Ports

Expand storage capacity by attaching compatible USB (version 2) hard drives to the USB ports.

SATA Interface

Serial ATA is a low cost interface technology that allows high speed data transfer. Serial ATA also allows more efficient internal airflow and also smaller chassis design.

Reset Button

If you forget your (admin) password, then use the reset button to restore the factory default password to "1234" (with user name "admin"), default IP address to 192.168.1.3 and subnet mask of 255.255.255.0. (Alternatively, you can use the web configurator 'forget password' feature.)

BIOS Reset Button

This button is for service personnel only. It is used to reset the BIOS settings to the ZyXEL default settings in the event the CMOS battery inside the NSA expires. This battery should not lose power for many years unless there's a battery failure or the NSA has been left powered off for an extended period of time.

1.2.2 Firmware Features

These are some of the main firmware features of the NSA.

RAID File Storage

Use RAID 0¹ if you want pure write speed and/or maximum capacity for your disks, and/or you have other means of protecting your data. Use RAID 1 if you have an even number of disks and want to mirror primary data to another disk(s). Use RAID 5 if you have four disks and you want to balance performance, hard disk capacity usage with data protection. If one disk fails, replace it and then re-synchronize to recover all data.

Snapshot²

A snapshot is a backup of your NSA data on the NSA. If files within a volume become infected or corrupted, you can revert the volume back to a previous snapshot. It's a good idea to create a snapshot before backing up data, to be sure you're backing up consistent data even if the backup is still running several hours later.

Disk Quota

Use the disk quota feature to stop one user(s) from using up all disk capacity by setting a limit on how much storage space he/she may use.

User Passwords

Configure a password for an individual **User** to restrict access to the NSA. Non-admin users can change their own passwords by accessing the web configurator. The **Change Password** screen appears when a username other than "admin" is entered.

Workgroup and Domain Security Modes

For Windows or Mac OSX users (using the Common Internet File System (CIFS) protocol for remote file access) you can configure **Workgroup** mode requiring users to log in with a user name and password. These user and group accounts are maintained on the NSA.

For a large number of CIFS users where accounts are stored on an external server, you can use **Domain** security mode (Primary Domain Controller)

Client Support

Data can be shared among all Windows, Mac, Linux, and UNIX users that have FTP client software or CIFS file sharing support (such as Samba for Linux and UNIX users).

HTTP/HTTPS

Access the NSA using a regular web connection (HTTP) or an encrypted web connection (HTTPS) using secure socket layer (SSL).

-
1. Not available at the time of writing.
 2. Not available at the time of writing.

DHCP (Dynamic Host Configuration Protocol)

DHCP (Dynamic Host Configuration Protocol) allows the NSA to obtain an IP address and subnet mask at start-up from a centralized DHCP server. Alternatively, you can give the NSA a static IP address and subnet mask.

Full Network Management

The embedded web configurator is an platform-independent web-based utility that allows you to easily access the NSA's management settings.

Firmware Upload and Configuration File Management

Upload new firmware to the NSA using the web configurator. You can also back up and restore the NSA configuration file containing all its settings to/from your computer.

NSA Discovery Utility (NDU)

Use the NDU from a Windows computer to find NSA(s) in your network, access the NSA login page, change its IP address configuration or map to a Windows network drive.

Genie Backup Manager

Genie Backup Manager is a tool for Windows users to create (and schedule) backups of data stored on their Windows computer to an NSA..

Note: The Genie Backup program uses the same network port as the NDU to discover the NSA. To avoid a port conflict, do not run the Genie Backup at the same time as the NDU.

Time and Date

Configure a time server and set a time zone for your NSA to show the correct times in e-mail alerts and logs.

E-mail Alerts

Configure an e-mail to be sent to an NSA administrator whenever an error occurs or as a scheduled log summary.

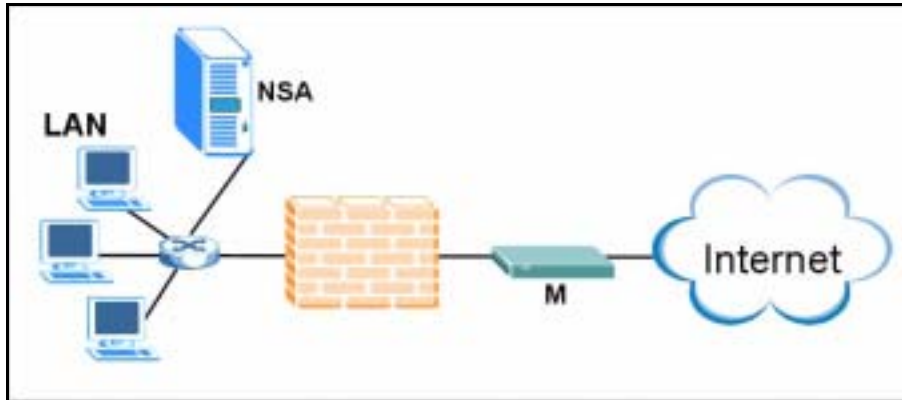
Note: See also the specification appendix for more detailed information on this NSA.

1.3 Applications for the NSA

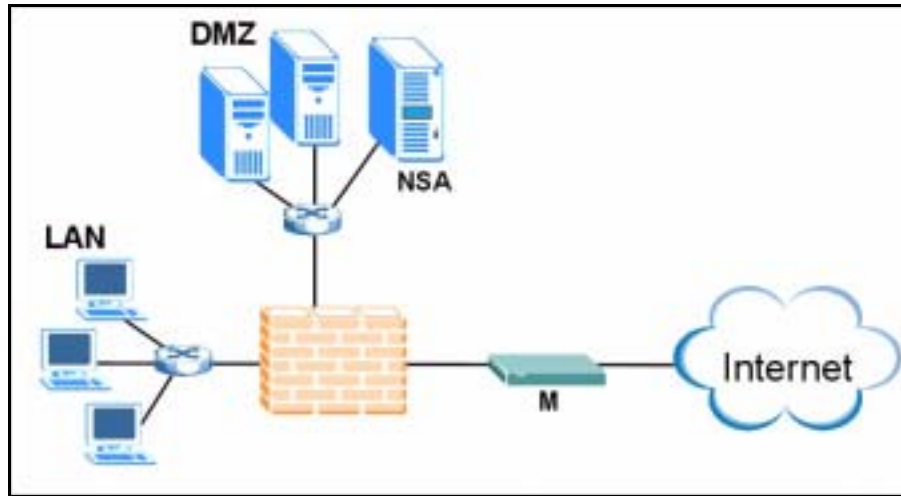
Here are example applications for the NSA in a small home network and in an office network with a DMZ (DeMilitarized Zone). It is recommended that the NSA is placed behind a firewall and/or IDP device to protect it.

In this small network, the NSA and LAN computers are protected by a firewall.

Figure 2 NSA in a Small Network



The NSA may be in an office network DMZ (DeMilitarized Zone).

Figure 3 NSA in an Office Network

1.3.1 NSA and Disk Drive LEDs

Figure 4 NSA Front Panel LEDs

The following table describes the disk drive LEDs. Refer to the Quick Start Guide to see how to install and remove hard drives from the disk trays.

Note: Make sure the NSA is turned off when you do this.

Table 1 Disk Drive LEDs

LED	COLOR	STATUS	DESCRIPTION
PWR	Green	Off	The hard disk drive tray is empty or not connected properly.
		On	The hard disk drive is connected properly to the NSA.

Table 1 Disk Drive LEDs (continued)

LED	COLOR	STATUS	DESCRIPTION
ALM	Red	Off	The hard disk drive is working properly if connected.
		On	The hard disk drive has a problem.

The following table describes the NSA LEDs.

Table 2 NSA LEDs

LED	COLOR	STATUS	DESCRIPTION
PWR	Green	Off	The NSA is turned off.
		On	The NSA is turned on and receiving power.
SYS	Red	On	The NSA has passed system tests.
		Blinking	The NSA is starting up or shutting down. Quick blinking indicates that your RAID volumes are in degraded mode.
	Orange	On	The NSA is in maintenance mode because no disk volumes exist.
		Blinking	Firmware is being upgraded to the NSA.
Green	On	The NSA has fully booted and is operating normally.	
DIAG	Red	Off	The DIAG LED is normally off.
		Blinking	It blinks slowly when hard drives are resynching; the SYS LED is green at this time. It turns off after the hard drives resynch. It blinks quickly if there is a firmware upgrade or Flash reset failure; the SYS LED blinks orange (quickly) at this time too.
LAN	Green	Off	The LAN is not connected.
		On	The NSA has a successful 10/100Mbps Ethernet connection.
		Blinking	The 100M LAN is sending or receiving packets.
	Orange	On	The NSA has a successful 1000Mbps Ethernet connection.
		Blinking	The 1000M LAN is sending or receiving packets.

CHAPTER 2

Introducing the Web Configurator

This chapter describes how to access the NSA web configurator and provides an overview of its screens.

2.1 Web Configurator Overview

The web configurator is an HTML-based management interface that allows easy NSA setup and management via Internet browser. Use Internet Explorer 6.0, Mozilla Firefox 1.0, Netscape Navigator 7.0 or later versions of these browsers. The recommended screen resolution is 1024 by 768 pixels or higher.

In order to use the web configurator you need to allow:

- Web browser pop-up windows from your device. Web pop-up blocking is enabled by default in Windows XP SP (Service Pack) 2.
- JavaScripts (enabled by default).

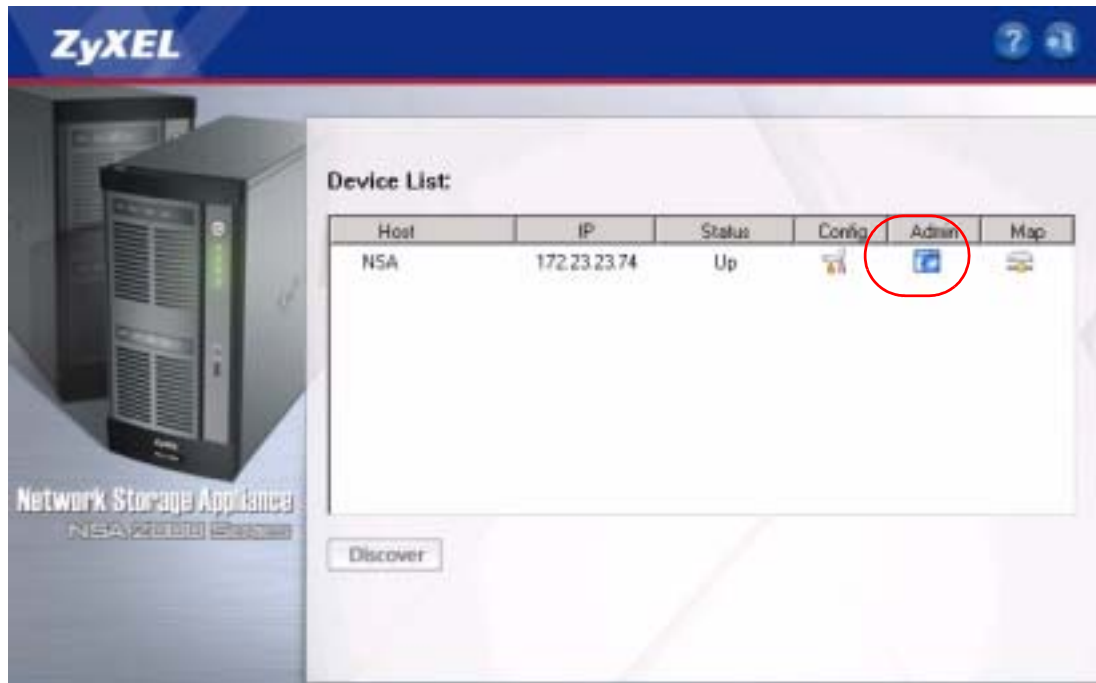
2.2 Accessing the NSA Web Configurator

Make sure your NSA is properly connected and that your computer is in the same subnet as the NSA (refer to the Quick Start Guide or the appendices).

2.2.1 Access the NSA Via NDU

If you don't know the IP address of the NSA, then use the NDU to find it. Refer to the Quick Start Guide to see how to install and run the NDU.

Figure 5 NDU Main Screen

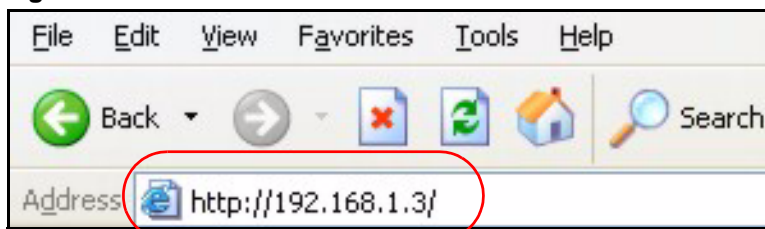


From the NDU main page click the icon under **Admin** to see the web configurator screen login screen.

2.2.2 Web Browser Access

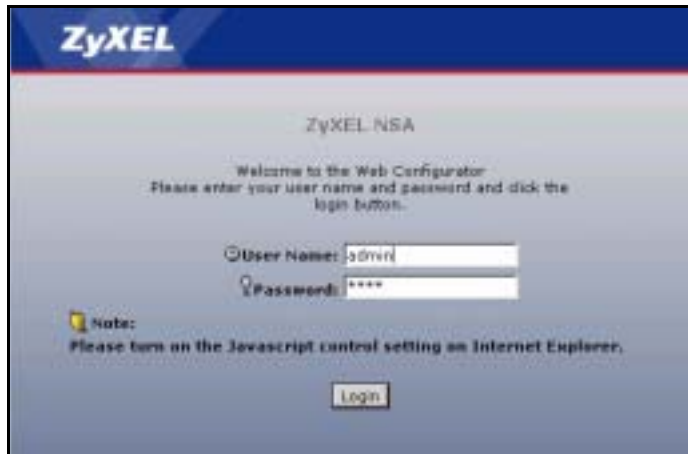
Open your browser and type in the IP address of the NSA; 192.168.1.3 is the default IP address if one has not been assigned by a DHCP server.

Figure 6 NDA URL



2.3 Login

The default user name and password are 'admin' and '1234' respectively. Enter your user name and password, then click **Login**. Non-admin users can change their passwords by using the username and password assigned to them in the **Sharing > Users** screen. See [Section 4.4.3 on page 54](#) for details.

Figure 7 NSA Login Screen

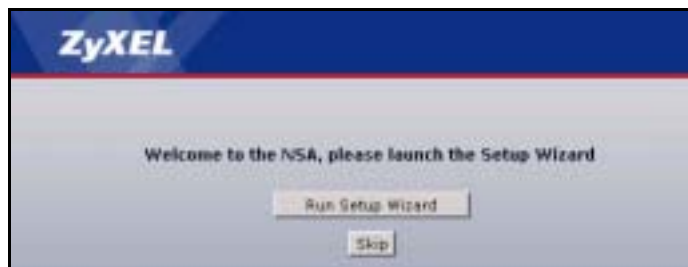
If another admin is already logged in, you may force them to log out in the next screen.

Figure 8 Administrator Already Logged In

You should see a screen asking you to change your password (highly recommended) as shown next. Type a new password (and retype it to confirm) and click **Apply** or click **Skip**.

Figure 9 Change Password ScreenThe image shows a web browser window with the ZyXEL logo at the top left. The main heading is "Update Admin Info" in red. Below the heading is a padlock icon. The text reads: "As a security precaution, it is highly recommended that you change the admin password." There are two password input fields: "Password" and "Confirm Password", both with masked characters (*****). Below these is an "Email Address" input field. A note states: "It is also highly recommended that you provide an email address so that you can receive important log alert messages and can be used if you forget your password." At the bottom, there are two buttons: "Apply" and "Skip".

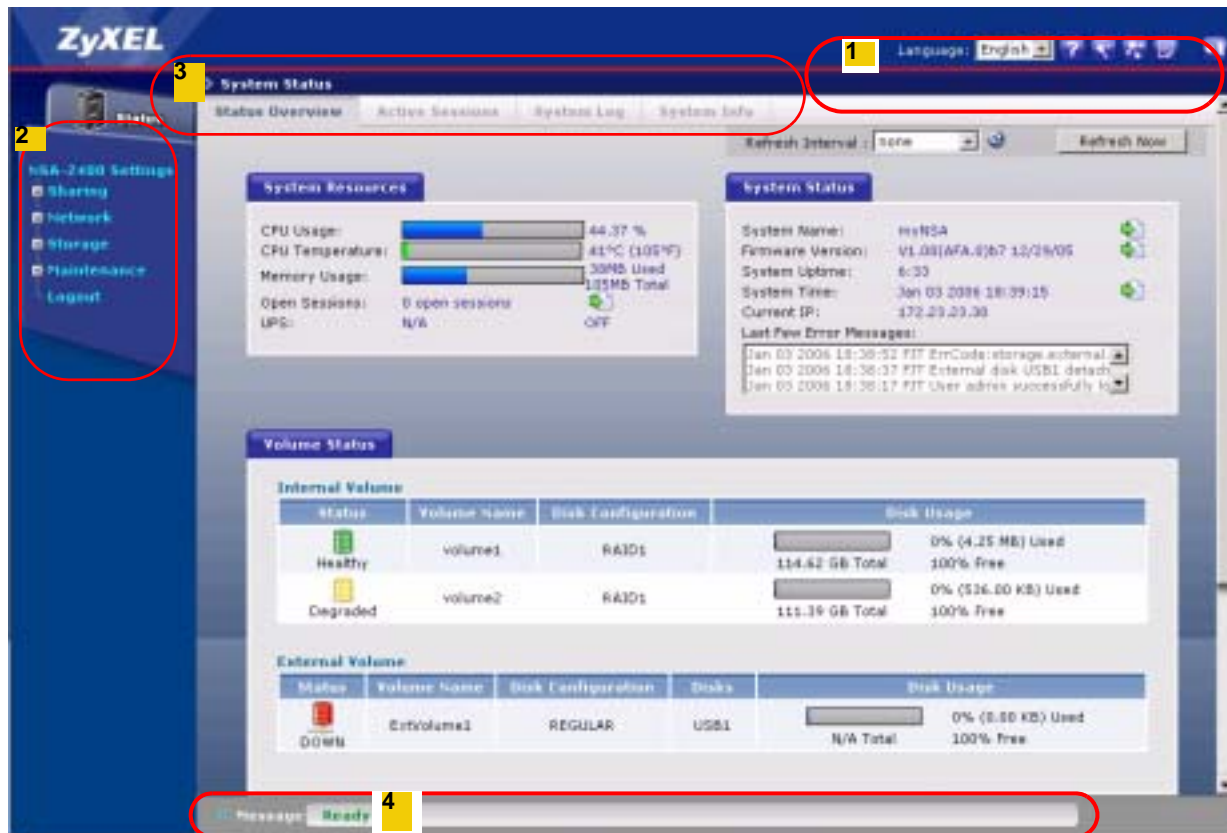
- 4 If this is your first time to log into the NSA, you will see a screen asking you to launch the setup wizard. Run the wizard to set up the basic NSA settings. See the Quick Start Guide for information on the wizard screens.

Figure 10 Launch Setup Wizard PromptThe image shows a web browser window with the ZyXEL logo at the top left. The main heading is "Welcome to the NSA, please launch the Setup Wizard". Below the heading are two buttons: "Run Setup Wizard" and "Skip".

2.4 NSA Main Screen Overview

Admin users first see the **Status Overview** screen after they log in. See the next chapter for details on this screen.

Figure 11 NSA Status Screen



Note: The web configurator management session automatically times out if it is left idle for 15 minutes. Simply log back into the NSA if this happens to you.

2.5 Global NSA Icons

The icons and language label at the top-right of the screen (1) are visible from most screens. The following table describes the 'global' icons and labels.

Table 3 Global Labels and Icons

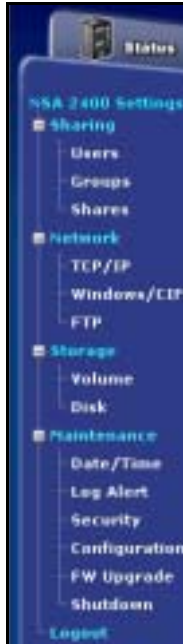
LABEL/ICON	DESCRIPTION
	Click this Help icon to open a web help page specific to the screen you are currently configuring.
	Click this Wizard icon to open a sub-menu of wizard(s).
	Click this About icon to view copyright and the model name.
	Click this Logout icon at any time to exit the web configurator. This is the same as clicking the Logout link at the bottom of the Navigation panel.

2.5.1 Navigation Panel

The navigation panel on the left of the screen (**2**) contains screen links. Click a link to display sub-links. The sub-links are the same as the screen tabs (**3**), so you can either click a screen tab or a sub link to go to the same screen. There is no sub-link for the overview screen. Certain screens also contain hyperlinks that allow you to jump to another screen.

Click the **Status** icon to open the **Status** screens.

Figure 12 Navigation Panel Links



The following table describes the navigation panel screens.


Table 4 Screens Summary

LINK	TAB	FUNCTION
Status	Status Overview	This screen shows system resources such as CPU usage and memory being used by the NSA, system status and NSA internal and external volumes.
	Active Sessions	This screen displays users who are currently using the NSA.
	System Log	This screen displays recent NSA system logs.
	System Info	This screen displays NSA hardware and IP address information.
Sharing	Overview	This screen displays statistics on users, groups and shares.
	Users	Use this screen to create users who may use the NSA. You may set user passwords, define storage limits per user, and associate users to a group(s).
	Groups	Use this screen to create groups and add group members.
	Shares	Use this screen to create shared folders to which you can allow users and/or groups read/write access rights.

Table 4 Screens Summary (continued)

LINK	TAB	FUNCTION
Network	Overview	This screen displays NSA IP address, CIFS and FTP information.
	TCP/IP	Use this screen to assign a dynamic or static IP address and DNS information as well as an NSA host name.
	Windows/CIFS	Use this screen to define a WINS server and choose a workgroup or domain authentication method.
	FTP	Use this screen to enable FTP file transfer to/from the NSA, set the number of FTP connections allowed and an FTP idle timeout.
Storage	Overview	This screen displays NSA volume, disk and snapshot information.
	Volume	Use the screen to create internal and external volumes. A volume is a fixed amount of storage on a disk.
	Disk	Use this screen to view internal and external disk information.
Maintenance	Overview	This screen displays NSA date and time, log alert, HTTPS (SSL) and firmware version information.
	Date/Time	Use this screen to chose a time zone and/or allow the NSA to synchronize with a time server.
	Log Alert	Use this screen to configure when/where to send e-mail alerts, and what mail server to use.
	Security	Use this screen to change the NSA login password and configure secure web connections to the NSA using HTTPS.
	Configuration	Use this screen to back up and/or restore the NSA configuration file and/or enable the NSA reset button to return the NSA to its default admin password and IP address.
	F/W Upgrade	Use this screen to upload new firmware to your NSA.
	Shutdown	Use this screen to restart the NSA or shut it down.
Logout		Click Logout to exit the web configurator. This is recommended to prevent unauthorized administrator access to the NSA.

2.5.2 Status Messages

At the bottom of the screen the message text box () displays status messages as you configure the NSA.

2.5.3 Common Screen Icons

The following table explains some icons that appear in several configuration screens.

Table 5 Common Configuration Screen Icons
















ICON	DESCRIPTION
	Click the Edit icon to go to a screen where you can change the configuration settings of an entry.
	Click the Remove icon to delete an entry from the list.

Table 5 Common Configuration Screen Icons (continued)

ICON	DESCRIPTION
	Click the Details icon to jump to related item's configuration screen.
	This is a user icon. Please see the sharing screens chapter for detailed information on variants of this icon.
	This is a group icon. Please see the sharing screens chapter for detailed information on variants of this icon.
	This is a share icon. Please see the sharing screens chapter for detailed information on variants of this icon.
	This icon represents a Healthy volume.
	This icon represents a Degraded volume. Click the Repair icon to fix a degraded RAID volume after you have replaced the faulty disk.
	This icon represents a Down volume. Click the Initialize icon to create a volume.
	This icon represents a Healthy disk.
	Click the Scan Disk icon to scan a hard disk drive for file system errors.
	Click the Disconnect icon before you remove an external hard drive so that you do not lose data that is being transferred to or from that hard drive.
	Click the Initialize icon for the NSA to create a volume on the (external) hard drive.
	Click the Locate icon to cause the LED on the external storage device to blink.
	Click the Repair icon to resynchronize a RAID volume after you replace a faulty hard disk.

2.6 Forgot Your Password

If you forget your password, you could have the NSA e-mail your password to you if you configured your e-mail address and mail server on the NSA. Alternatively, if you didn't configure an e-mail address, then you will have to reset the NSA.

2.6.1 NSA Sends Password

If you enter a wrong password, the NSA displays the following screen. Click the **Forgot Your Password** link to display the **Forgot Your Password** screen.

Figure 13 Wrong Password

Click **Continue** to have the NSA e-mail a randomly generated password to the e-mail address you configured.

Figure 14 Generate Password

Click **login** to go to the NSA screen and enter the new e-mailed password there. You should change this password and then write down your new password and put it in a safe place.

Log in With New Password



2.6.2 Reset the NSA

Alternatively, if you forget your password or cannot access the web configurator, use the **RESET** button at the front of the NSA. You will NOT lose all NSA configurations but the IP address, subnet mask and admin password are all returned to the factory defaults.

Note: You must enable the **RESET** button in the **Maintenance > Configuration** screen before you can use it.

2.6.2.1 Procedure To Use The Reset Button

- 1 Press and hold the **RESET** button until you hear a beep, and then release it.
- 2 The NSA automatically restarts to complete the reset.

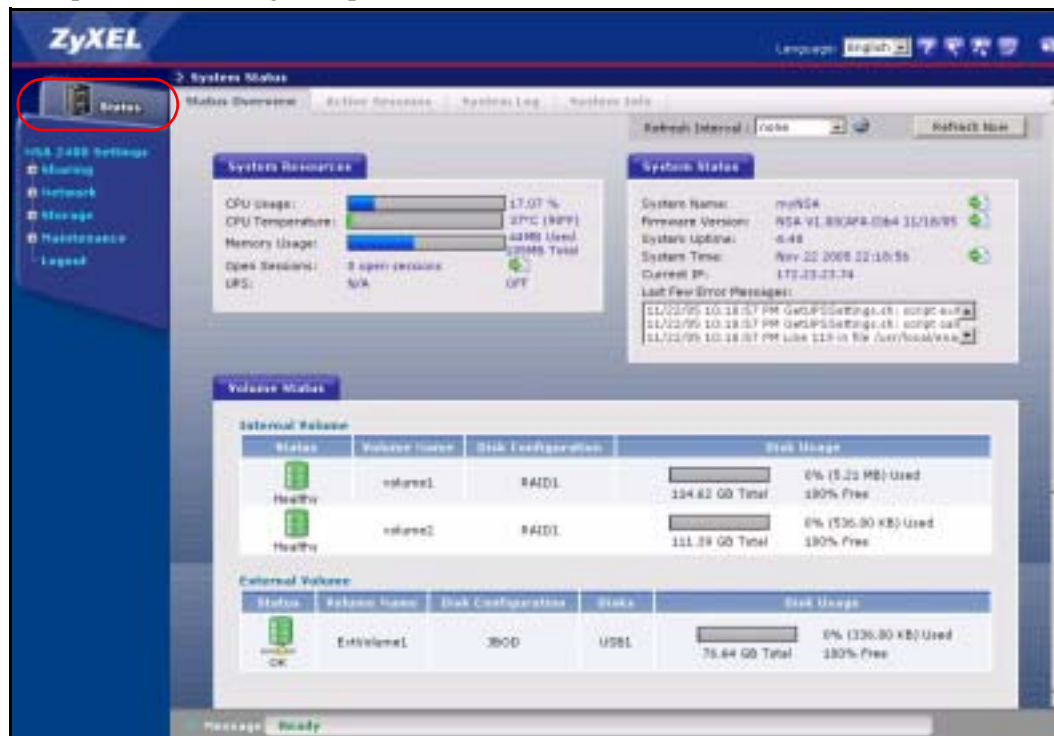
CHAPTER 3

Status Screens

This chapter introduces the **Status** screens of the NSA.

3.1 Status Overview Screen

The **Status Overview** screen is the first main web configurator screen you see after you log in (and complete the wizard the first time). To view the status screens, click the **Status** icon on the top-left of the navigation panel.



The following table describes the labels in this screen.

Table 6 System Overview



LABEL	DESCRIPTION
	Select a number of seconds or None from the drop-down list box to refresh all screen statistics automatically at the end of each time interval.
	Click the Refresh icon to immediately refresh the status screen statistics.

Table 6 System Overview (continued)

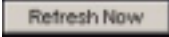
LABEL	DESCRIPTION
	Alternatively, click this button to immediately refresh the status screen statistics.
System Resources	
CPU Usage	This displays NSA CPU usage by all current processes since the last update. If too many users are using the NSA then the NSA may appear sluggish.
CPU Temperature	This displays the current temperature of the NSA CPU. If the temperature is not within range (about 0 ^o to 85 ^o C) the NSA may malfunction. If the NSA overheats for example, turn it off and let it cool down. Make sure the fans are working and it is in a well ventilated place.
Memory Usage	This number shows how much of the NSA's total memory is being used.
Open Sessions	This shows the current number of active sessions. It is useful when you want to restart or shutdown the NSA so you can tell if there are users currently connected to the NSA. You should then contact each user to make sure that they disconnect from the NSA before you restart or shut it down. Click the view details link to go to the System Status > Active Sessions screen.
UPS	<p>This field displays whether an Uninterruptable Power Supply (UPS) is being used. A UPS is advisable to protect sensitive data stored on the NSA in the event of a power outage.</p> <p>A battery meter displays what percentage Uninterruptable Power Supply (UPS) battery power remains when an APC UPS is connected to an NSA USB port and is turned on. Power from the UPS is used when power from the mains is down and while the UPS has battery power.</p> <p>Power from the mains is used when the mains power returns; the APC UPS battery is recharged then too. This field displays N/A when no UPS is connected to the NSA or it is turned off.</p>
System Status	
System Name	<p>This displays the name which helps you find the NSA on the network. Click the update link to go to the Network > TCP/IP screen. Click the Modify button after the Server Name label in that screen to go to the Network > Windows/CIFS in which you can change the Server Name.</p> <p>You can enter up to 15 alphanumeric characters with minus signs allowed but not as the last character. The name must begin with an alphabetic character (a-z) and is NOT case sensitive.</p>
Firmware Version	This is the NSA firmware version and the date created. Click the update link to go to the Maintenance > Firmware Upgrade screen from which you can upload new firmware.
System Uptime	This is the total time the NSA has been on since your last power-up.
System Time	This displays the date (month/date/year) and time (hours/minutes/seconds). Click the update link to go to the Maintenance > Date/Time screen from which you can change the system time.
Current IP	This displays the NSA's IP address.
Last Few Error Messages	This displays the most recent (nine) error messages generated by the NSA. Click on a log entry to go to the Status > System Log screen.
Volume Status	A volume is a storage area on a single disk or spread across a number of disks within a single file system.
Internal Volume	This displays the volumes created on the NSA hard drives.

Table 6 System Overview (continued)

LABEL	DESCRIPTION
External Volume	This displays the volumes created on USB hard drives connected to the NSA. USB ports are numbered in the order that you insert USB devices.
Volume Name	This field shows the NSA-generated name for the volume.
Disk Configuration	This field (also known as Type) shows what type of data storage system (a RAID type or SINGLE) the volume is using. For external drives, it may show REGULAR or OK meaning that the NSA can read the volume but the volume wasn't created on the NSA.
Disks	For external drives, this field shows USB1 for the first external hard drive you connect to the NSA (regardless of which USB port), USB2 for the second and USB3 for the third.
Disk Usage	This field shows total disk size, the percentage of the volume being used and the percentage that is available.

3.2 Active Sessions Screen

The **Active Sessions** screen shows how many users are currently connecting to the NSA via CIFS and FTP (not web configurator).

Figure 15 Status > Active Sessions

Type	Share Name	User Name	Connected At	IP Address
WINDOWS/CIFS	public	ANONYMOUS CIFS	Wed Nov 23 15:56:51 2005	172.23.23.175

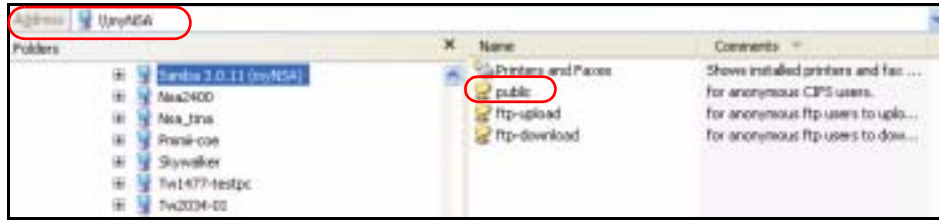
The following table describes the labels in this screen.

Table 7 Active Sessions

LABEL	DESCRIPTION
Type	This shows whether it's a Windows/CIFS or FTP connection to the NSA.
Share Name	This displays the shared folder name on the NSA that the user is connected to for CIFS sessions and is blank for FTP sessions.
User Name	This displays the name of the user connected to the NSA if one is defined and ANONYMOUS CIFS or ANONYMOUS FTP otherwise.
Connected At	This displays the date and time the user last connected to the NSA in day, month, date, hour, minute, second, year format.
IP Address	This displays the IP address of the computer connected to the NSA.

3.2.1 Session Example (Windows)

Open windows explorer and type two back slashes followed by the NSA name or IP address. Initially you can only read and write to the **Public** folder until you create shares on the NSA. This session is then displayed as shown in [Figure 15 on page 41](#).

Figure 16 Session Example (Windows)

3.3 System Log

The following screen displays all NSA logs. There are at most 128 entries in the log. Older logs are removed by the system. You cannot download the log file via FTP or CIFS.

See the User Guide appendices for example log messages.

Table 8 System Logs (continued)

LABEL	DESCRIPTION
First/Prev	Use these hyperlinks to navigate to the first or previous log page.
Next/Last	Use these hyperlinks to navigate to the next or final log page.
Purge all Logs	Click this button to erase all logs from the NSA. This may be advisable when there is not much hard drive space on the NSA available.
Edit Log Alert Settings	Click this button to jump to the Maintenance > Log Alert page from where you can decide when to send alerts and where to send e-mails.

The following table shows information on log categories.

Table 9 Log Categories

LOG CATEGORY	DESCRIPTION
Network	This log category shows information on network configuration, setting changes and so on.
FTP	This log category shows FTP session related information.
CIFS	This log category shows Windows/CIFS session related information.
Security	This log category shows information on user account changes, web sessions and so on.
Storage	This log category shows disk, volume and RAID information.
Quota	This log category shows quota control information.
System	This log category shows all other system related messages.

The following table shows information on log severity levels Levels range from 0 to 6 with 0 being the most severe level log and 6 being an informational log only. Log levels are not displayed in the logs and are for your reference only.

Table 10 Log Severity Levels

LEVEL	DESCRIPTION
0	Emergency
1	Alert
2	Critical
3	Error
4	Warning
5	Notice
6	Info

See the appendices for a table of example log messages.

3.4 System Info

Use this screen to view detailed NSA system and hardware information.

Figure 18 System Info



The following table describes the labels in this screen.

Table 11 System Info

LABEL	DESCRIPTION
System Name	This displays the name which helps you find the NSA on the network. Click the update link to go to the Network > TCP/IP screen. Click the Modify button after the Server Name label in that screen to go to the Network > Windows/CIFS in which you can change the Server Name . You can enter up to 15 alphanumeric characters with minus signs allowed but not as an end character. The name must begin with an alphabetic character (a-z) and is not case sensitive.
Model Name	This displays the NSA model name.
Firmware Version	This is the NSA firmware version and the date created. Click the update link to go to the Maintenance > Firmware Upgrade screen from which you can upload new firmware.
CPU Info	This displays the type of CPU the NSA has.
Flash Memory Size	This displays the amount of non-volatile flash memory. Flash memory is used for storing NSA firmware and configuration files.
RAM Memory Size	This displays the amount of (volatile) RAM. The NSA uses RAM during system runtime.
Hardware Reset Button	This displays whether the reset button is enabled or not. Use the reset button to restore the factory default user name to "admin", default password to "1234", default IP address to 192.168.1.3 with subnet mask of 255.255.255.0. You must enable the reset button in the Maintenance > Configuration screen before you can use it.
IP Address	This displays the NSA's IP address.
IP Subnet Mask	This displays the NSA's subnet mask.
Default Gateway	This displays the NSA's default gateway.

Table 11 System Info (continued)

LABEL	DESCRIPTION
MAC Address	This displays the NSA's unique physical hardware address (MAC). You need the MAC address to register the product at myZyXEL.com.
UPS Info	<p>This field displays whether an Uninterruptable Power Supply (UPS) is being used. A UPS is advisable to protect sensitive data stored on the NSA in the event of a power outage.</p> <p>A battery meter displays what percentage Uninterruptable Power Supply (UPS) battery power remains when an APC UPS is connected to an NSA USB port and is turned on. Power from the UPS is used when power from the mains is down and while the UPS has battery power.</p> <p>Power from the mains is used when the mains power returns; the APC UPS battery is recharged then too. This field displays N/A when no UPS is connected to the NSA or it is turned off.</p>

CHAPTER 4

Sharing Screens

This chapter introduces the **Sharing** screens of the NSA.

4.1 Sharing Introduction

Use the **Sharing** screens to:

- Create and manage user accounts. Users are people who have access rights to the NSA and can store files there for later retrieval.
- Create and manage groups. A group is a set of users.
- Create and manage shares. A share is a set of users/groups access permissions mapped to a specific folder on a volume. It is equivalent to the Windows concept of a shared folder, but is independent of the folder. You can map a share to a network drive for easy and familiar file transfer for Windows users.

4.2 Sharing Overview

A **Local** user or group is one created on the NSA when the NSA is in **Workgroup** mode.

Domain users and groups are created on a centralized Windows-based domain controller. This list is used by the NSA when authenticating users and/or groups that seek access to a share.

Note: More restrictive access rights override less restrictive ones. For example, if a user belongs to different groups with different access rights to the same share, then the more restrictive access right would apply. That is deny access overrides read access, overrides read-write access. For example, user Joe belongs to the Sales group. He has read access to the MIS share. The Sales group are denied access to this MIS share. Therefore, Joe is also denied access to the MIS share.

4.2.1 In Limbo and In Conflict

If a user or group is deleted in the domain controller, (but not on the NSA) then it appears as **in limbo** on the NSA.

A conflict users is a local user that has the same user name as that of a user on a domain controller. For example, if you first create local users and groups on the NSA (in **Workgroup** mode) and later you change to domain mode where you create (or there are already) identical users and groups, then they appear as in conflict on the NSA.

Note: You cannot set a disk quota for users that are in conflict.

If you started in **Domain** mode and later you switch to **Workgroup** mode, the NSA will allow you to create user names and group names that already exist on the domain controller.

If the conflicting domain user's password and local user's password are NOT the same, than the two users are treated as two distinct users when using CIFS. Therefore, when using CIFS, each user can only access shares to which they have been given access rights.

However, if the domain user's password and local user's password are also the same, then only shares set to be accessible by the local user are actually accessible by both the domain user and local user. The NSA has no way to distinguish these two users as their passwords and user names are exactly the same.

Note: During a conflict users situation, the local user takes precedence ONLY if the domain user and local user's passwords are the same.

The situation is different for conflicting users when using FTP. For FTP if there are conflict users, there will be no way for the FTP server to differentiate between the two user names. Therefore, both domain user and local user can log in through FTP using their respective passwords (regardless of whether they are the same or not) and be able to access all shares accessible by EITHER the local user or domain user.

Note: It is possible for the conflicting domain user to log in via FTP and access shares that are supposed to be only accessible by the conflicting LOCAL user and vice versa.

4.2.1.1 In Limbo and In Conflict Example

Suppose there is a local user named u1 and a domain user named u1.

- Share 1 is configured to be only accessible by the local user u1.
- Share 2 is configured to be only accessible by the domain user u1.
- Share 3 is configured to be accessible by BOTH the local and domain u1.

The table below shows the actual accessibility of the above shares for the conflict users (local and domain u1) both when they have the same and when they have different passwords.

Table 12 In Limbo and In Conflict Example

CONFLICT USER U1	SHARE1	SHARE 2	SHARE 3
Different Passwords	CIFS: Accessible by Local u1 only. FTP: Accessible by Domain AND Local u1.	CIFS: Accessible by Domain u1 only. FTP: Accessible by Domain AND Local u1.	CIFS: Accessible by Domain u1 AND Local u1. FTP: Accessible by Domain AND Local u1.
Same Passwords	CIFS: Accessible by Domain AND Local u1. FTP: Accessible by Domain AND Local u1.	CIFS: Inaccessible by either User or Domain u1. FTP: Accessible by Domain AND Local u1.	CIFS: Accessible by Domain AND Local u1. FTP: Accessible by Domain AND Local u1.

4.2.2 Sharing Overview Screen

Click the **Sharing** link in the Navigation panel to access the **Sharing > Overview** screen. This is the first screen displayed.

Figure 19 Sharing > Overview

The screenshot shows a web interface titled 'Sharing > Overview'. It has three tabs: 'Overview' (selected), 'Users', and 'Shares'. The main content is divided into three sections: 'Users', 'Groups', and 'Shares', each with a list of statistics and their values.

Category	Label	Value
Users	Total Number of Users	2
	Total Number of Local Users	2
	Total Number of CIFS Domain Users	0
	Number of Users in Limbo	0
	Number of Conflict Users	0
Groups	Total Number of Groups	1
	Number of Local Groups	1
	Number of Domain Groups	0
	Number of Groups in Limbo	0
	Number of Conflict Groups	0
Shares	Number of Shares	1
	Number of Auto Shares	1
	Number of Disabled Shares	0
	Number of Unavailable Shares	0

The following table describes the labels in this screen.

Table 13 Sharing Overview

LABEL	DESCRIPTION
Users	
Total Number of Users	This field displays the total number of user accounts created on the NSA and/or a centralized Windows-based domain controller.
Total Number of Local Users	This field displays the total number of users with accounts created on the NSA.
Total Number of CIFS Domain Users	This field displays the total number of users created on a centralized Windows-based domain controller when the NSA is functioning in Domain mode.
Number of Users in Limbo	This field displays the number of users who were once on the domain controller but the NSA (in Domain mode) is currently unable to determine if the user still exists on the domain controller. This may happen if he/she has been deleted on the domain controller or the NSA is unable to connect to the domain controller. In the latter case, all domain users would be in limbo.
Number of Conflict Users	A conflict users is a local user that has the same user name as that of a user on a domain controller. This field displays how many identical users there are.
Groups	
Total Number of Groups	This field displays the total number of groups created on the NSA and/or a centralized Windows-based domain controller.
Number of Local Groups	This field displays the total number of groups created on the NSA when the NSA is in Workgroup mode.

Table 13 Sharing Overview (continued)

LABEL	DESCRIPTION
Number of Domain Groups	This field displays the total number of groups created on a centralized Windows-based domain controller when the NSA is functioning in Domain mode.
Number of Groups in Limbo	This field displays the number of groups who were once on the domain controller but the NSA (in Domain mode) is currently unable to determine if the group still exists on the domain controller. This may happen if the group has been deleted on the domain controller or the NSA is unable to connect to the domain controller. In the latter case, all domain groups would be in limbo.
Number of Conflict Groups	A conflict group is a local group that has the same group name as that of a group on a domain controller. This field displays how many identical groups there are.
Shares	
Number of Shares	This field displays the total number of shares (default and created) on the NSA.
Number of Auto Shares	Auto shares are shares that are automatically created by the NSA for supported external USB hard drives that are not backup drives. This field displays the number of these type external USB hard drives attached to the NSA.
Number of Disabled Shares	This field displays the number of shares that have been disabled on the NSA.
Number of Unavailable Shares	If a shared folder is deleted or moved, the share appears as 'unavailable' on the NSA. This field displays the number of such shares.






4.3 Users

Use this screen to create and manage users who can store files on the NSA.

4.3.1 User Icons

The following table describes the user icons.

Table 14 User Icons

ICON	DESCRIPTION
	This is an enabled local user icon.
	This is an enabled domain user icon.
	This is a local user in conflict icon.
	This is a domain user in limbo icon.
	This is a disabled local user icon. You cannot disable a domain user.

4.3.2 Users Summary Screen

Click the **Sharing** link in the Navigation panel and then click the **Users** link or the **Users** tab to access the **Sharing > Users** screen.

Figure 20 Sharing > Users



The following table describes the labels in this screen. See [Table 14 on page 50](#) for icon details.

Table 15 Sharing > Users

LABEL	DESCRIPTION
Status	This icon displays whether the account is enabled, disabled, in conflict or in limbo.
Type	This field displays whether the user is a local user with an account created on the NSA or a domain user created on a domain controller or active server directory.
User Name	This field displays the user name created when you add a new user. admin is the default NSA super user and cannot be deleted.
Quota	This field displays the maximum amount of storage space this user may occupy on the NSA. It is unlimited if none is specified.
Groups	This field displays the group(s) this user belongs to on the NSA.
Actions	This label displays the allowable action for that user.
Add a New Local User	Click this button to go to a screen to create a new user on the NSA.

4.4 Adding a New User

Use this screen to add local users. Domain users must be added on the domain server. Click the **Add a New Local User** button in the screen shown previously to create a new NSA user account with NSA access password.

4.4.1 User Names

Enter a user name from one to 32 characters. The first character must be alphabetical (case insensitive, [A-Z a-z]); numeric characters are not allowed as the first character.

The user name can only contain the following characters:

- Alphanumeric A-z 0-9 (there is no unicode support)
- Spaces
- _ [underscores]
- . [periods]
- - [dashes]

Other limitations on user names are:

- All leading and trailing spaces are removed automatically.
- Multiple spaces within names are converted to a single space.
- User names are case insensitive. The user name cannot be the same (no matter the letter case) as an existing local user or domain user. For example, if there exists a domain user with the name 'BOB', you cannot create a local user named 'bob'. If you enter a user 'bob' but use 'BOB' when connecting via CIFS or FTP, it will use the account settings used for 'bob'.
- The user name cannot be the same as a system user name such as **ANONYMOUS_CIFS**, **ANONYMOUS_FTP**, **EVERYONE** nor be the same as an existing local or domain user. Other reserved user names that are not allowed are:
 - bin
 - daemon
 - ftp
 - ftpguest
 - nobody
 - root
 - smbguest
 - admin

4.4.2 Add a New User Screen

Figure 21 Add a New User

The following table describes the labels in this screen.

Table 16 Add a New User

LABEL	DESCRIPTION
New User Information	
Enabled	You must select this check box in order for this user to be able to access the NSA.
User Name	Type a user name from 1 to 32 single-byte ASCII characters. See Section 4.4.1 on page 51 for more details on user names.
Email Address (optional)	Enter a valid e-mail address for this user. You can use up to 200 alphanumeric characters (periods and the underscore are also allowed) without spaces.
Password	Create a password associated with this user. You can type from one to 14 single-byte (no Chinese characters allowed for example) ASCII characters. Non-admin users can change their passwords by logging into the NSA web configurator using the username and password as defined here. After logging in, the Change Password screen is displayed. Enter a new password in that screen and confirm it by re-entering it. Non-admin users do not see other web configurator screens.
Password (confirm)	You must type the exact same password that you just typed in the above field.
Quota	Type a positive whole number (no floats, no negatives) as the maximum amount of storage (in MB) this user may use on the NSA. 0 MB means unlimited storage. The quota cannot exceed 500000000 MB.

Table 16 Add a New User (continued)

LABEL	DESCRIPTION
New Group Membership	You need to first create groups on the NSA. A group is a set of users that have common NSA access rights. A user can belong to more than one group. More restrictive access rights override less restrictive ones. Choose what groups this user should be added to or removed from. You can select multiple groups by holding the [Ctrl] key while you click.
Available Groups	These are the groups that have been created on the NSA. Select the group(s) that you want the user to join and then click the Add Selected Group(s) button. You need to click Apply for the changes to take effect.
Group Membership	These are the groups that the user already belongs to on the NSA. Select the group(s) that you want the user to leave and then click the Remove Selected Group(s) button. You need to click Apply for the changes to take effect.
Add Selected Group(s)	Select the group(s) that you want the user to join from the Available Groups list and then click the Add Selected Group(s) button. You need to click Apply for the changes to take effect.
Remove Selected Group(s)	Select the group(s) that you want the user to leave from the Group Membership list and then click the Remove Selected Group(s) button. You need to click Apply for the changes to take effect.
Apply	Click this button to save your changes back to the NSA.
Cancel	Click this button to begin configuring this screen afresh.

Note: User-group membership edits are also updated in the corresponding **Sharing > Groups > Edit Group** screen.

4.4.3 User Password Management

Non-admin users may change their passwords by themselves by logging into the NSA web configurator using the username and password as defined in the previous screen. After logging in, the **Change Password** screen is displayed. Enter a new password in that screen and confirm it by re-entering it.

Figure 22 User Password Management

Note: Non-admin users do not see other web configurator screens.





4.5 Groups

Use this screen to create and manage groups. A group is a set of users.

4.5.1 Group Icons

The following group icons display under **Status** in the **Group Summary** screen.

Table 17 Group Icons

ICON	DESCRIPTION
	This is a local group icon. Groups cannot be disabled.
	This is a domain group icon. Groups cannot be disabled.
	This is a local group in conflict icon.
	This is a domain group in limbo icon.

4.5.2 Groups Summary Screen

Click the **Sharing** link in the Navigation panel and then click the **Groups** link or the **Groups** tab to access the **Sharing > Groups** screen.

Figure 23 Sharing > Groups

The following table describes the labels in this screen. See [Table 17 on page 55](#) for icon details.

Table 18 Sharing > Groups

LABEL	DESCRIPTION
Status	This icon displays whether the group is enabled, in conflict or in limbo. Groups cannot be disabled.
Type	This field displays whether the group is a local group created on the NSA or a domain group created on a domain controller or active server directory.
Group Name	This field displays the group name created when you add a new group.
Actions	This label displays the edit and remove icons for all groups created on the NSA. Click the Edit icon to edit the corresponding existing group. Click the Remove icon to delete it.
Add a New Local Group	Click this button to go to a screen to create a new group on the NSA.

4.6 Adding a New Group

Click the **Add a New Local Group** button in the screen shown previously to create a new group with specified NSA access rights.

4.6.1 Group Names

Enter a group name from one to 16 characters. The first character must be alphabetical (case insensitive, [A-Z a-z]); numeric characters are not allowed as the first character.

The group name can only contain the following characters:

- alphanumeric A-z 0-9 (there is no unicode support)
- Spaces
- _ [underscores]
- . [periods]
- - [dashes]

Other limitations on group names are:

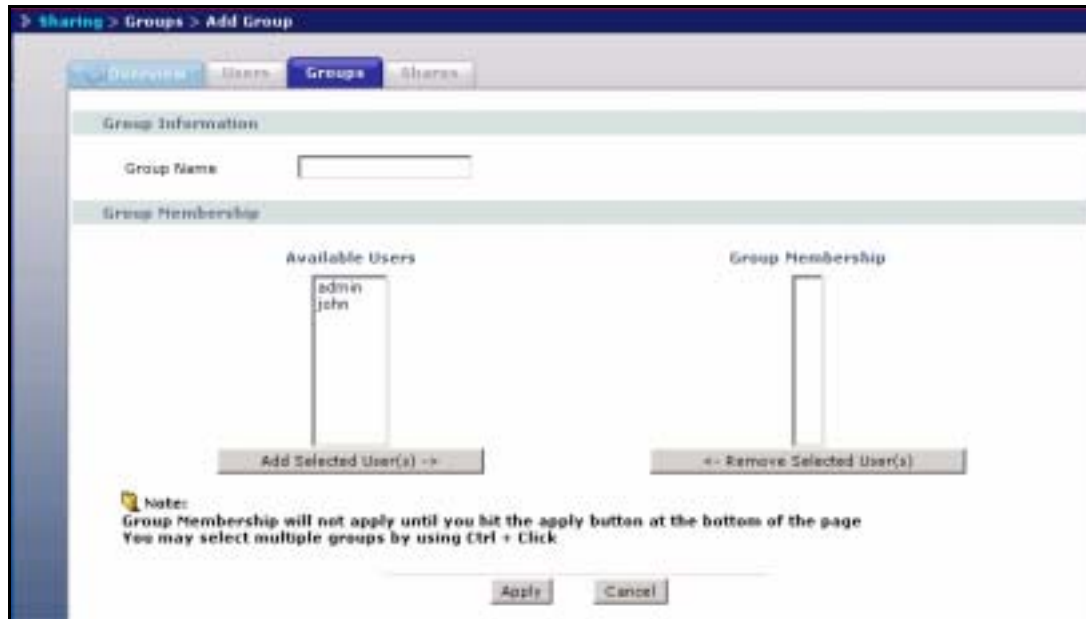
- All leading and trailing spaces are removed automatically.
- Multiple spaces within names are converted to a single space.
- Group names are case insensitive. The group name cannot be the same (no matter the case) as an existing local group or domain group. For example, if there exists a domain group with the name 'BOB', you cannot create a local group named 'bob'. If you enter a group 'bob' but use 'BOB' when connecting via CIFS or FTP, it will use the account settings used for 'bob'.

The group name cannot be ANONYMOUS_CIFS, ANONYMOUS_FTP, EVERYONE nor be the same as an existing local or domain group. Other reserved group names that are not allowed are:

- daemon
- disk
- ftp
- nobody
- lp
- root
- tty
- utm

4.6.2 Add A New Group Screen

Figure 24 Add a New Group



The following table describes the labels in this screen.

Table 19 Add Group

LABEL	DESCRIPTION
New Group Information	
Group Name	Type a group name from 1 to 16 single-byte ASCII characters. The first character must be alphabetical [A-Z a-z] (case insensitive) and cannot be a number. See Section 4.6.1 on page 56 for more information on group names.
Group Membership	A group is a set of users that have common NSA access rights. A user can belong to more than one group. Choose what users should be added to or removed from this group. You can select multiple users by holding the [Ctrl] key while you click.
Available Users	These are the users that have been created on the NSA. Select the user(s) that you want to join this group and then click the Add Selected User(s) button. You need to click Apply for the changes to take effect.
Group Membership	These are the users that already belong to this group on the NSA. Select the user(s) that you want to leave this group and then click the Remove Selected User(s) button. You need to click Apply for the changes to take effect.
Add Selected User(s)	Select the user(s) that you want to join this group from the Available Users list and then click the Add Selected User(s) button. You need to click Apply for the changes to take effect.
Remove Selected User(s)	Select the user(s) that you want to leave this group from the Group Membership list and then click the Remove Selected User(s) button. You need to click Apply for the changes to take effect.
Apply	Click this button to save your changes back to the NSA.
Cancel	Click this button to begin configuring this screen afresh.

Note: Group-user membership edits are also updated in the corresponding **Sharing > Users > Edit User** screen.




4.7 Shares

Use this screen to create and manage shares. A share is a set of users/groups access permissions mapped to a specific folder on a volume. It is equivalent to the Windows concept of a shared folder, but is independent of the folder.

4.7.1 Share Icons

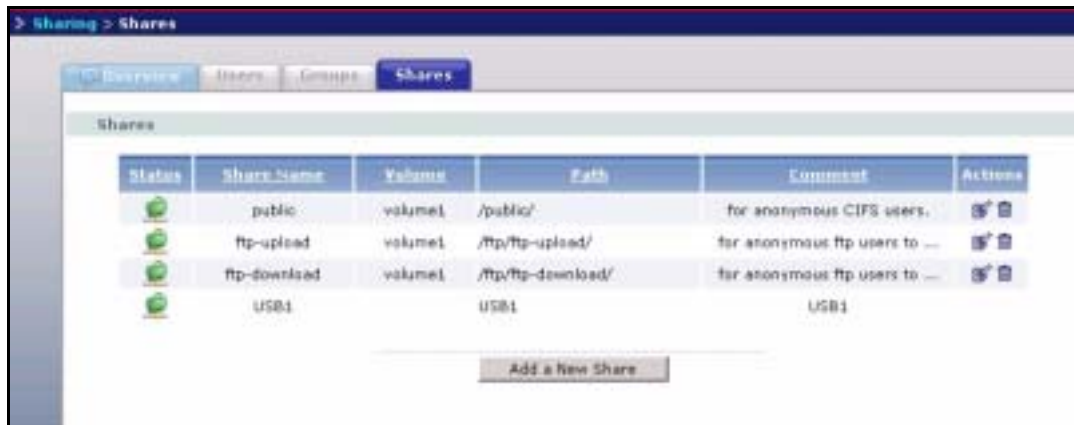
These are the share icons you will see in this screen.

Table 20 Share Icons

ICON	DESCRIPTION
	This is an available share icon.
	This is an unavailable share icon.
	This is a disabled share icon.

4.7.2 Share Summary Screen

Click the **Sharing** link in the Navigation panel and then click the **Shares** link or the **Shares** tab to access the **Sharing > Shares** screen. The default shares on the NSA are shown in the following figure.

Figure 25 Sharing > Shares

The following table describes the labels in this screen. See [Table 20 on page 59](#) for icon details.

Table 21 Sharing > Shares

LABEL	DESCRIPTION
Status	This icon displays whether the share is available, unavailable or disabled.
Share Name	This displays the name of the shared folder on the NSA.
Volume	This displays which storage area (volume) the share was created. The default shares are on volume1.
Path	This displays the location of the shared folder on the NSA. Forward slashes are used as path (folder tree branch) separators. Share paths that no longer exist are shown in red.
Comment	This is some description of the share as the (limited) share name may not be obvious enough for users to recognize clearly.
Actions	This displays the edit and delete icons for all shares created on the NSA. Click the Edit icon to edit the corresponding existing share. Click the Remove icon to delete it.
Add a New Share	Click this button to go to a screen to create a new share on the NSA.

4.8 Adding a New Share

Click the **Add a New Share** button in the screen shown previously to create a new shared folder with optional access password.

4.8.1 Share Names

The share name can only contain the following characters:

- Alphanumeric A-z 0-9 (there is no unicode support)
- Spaces
- _ [underscores]

- . [periods]
- - [dashes]

Other limitations on share names include:

- All leading and trailing spaces are removed automatically.
- Multiple spaces within names are converted to a single space.
- Share names must be unique (they cannot be the same as other share names).
- Share names cannot use names reserved for “automatic shares” of external USB disk volumes be unique, for example, “USB[0-9]{1,2}”, that is, a share named “USB” followed by a one or two digit number).
- The minimum character length of a share name is one character, that is a share name cannot be blank.
- The maximum character length of share name is 255 characters.

4.8.2 Share Paths

A share path is the full path to a folder on a volume that will be shared, for example, /mysa/topsecret/ugs/. This is independent from a “share name” which is the name shown for this share when accessing the share via CIFS or FTP. The path should start with a '/' (forward slash) followed by a parent folder, child folders leading to the folder that is to be shared.

The share path can include all characters including unicode characters (that is, you can use Chinese folder names for example) except for the following characters:

- \ [backslash] this will be converted to forward slash and interpreted as a path delimiter
- / [forward slash] this is always interpreted as a path delimiter, so a folder cannot include it in its folder name
- : [colon]
- * [asterisk]
- ? [question mark]
- “[double quote]
- < [less than]
- > [greater than]
- | [pipe]

Please also note the following as regards share paths:

- If the share path is missing the root path slash (the first forward slash), the system will automatically add the initial slash.
- If the share path is missing the end trailing slash, the system will automatically add the trailing slash.
- If the share path has '\ (backslashes) instead of '/' (forward slashes) they will all be automatically converted to forward slashes.

- Share paths are case insensitive. If a share path already exists on the volume, for example, /My/Little/Corner/Of/The/World/) but the entered share path is the same as the existing path except the character case does not match (for example, /MY/liTTle/CORNER/oF/The/wOrLd/), then the NSA automatically converts the path to match to the existing path's case. This is done because folder paths for CIFS on Windows systems are case insensitive. Case insensitivity does not include some special characters, so ë will not be converted to Ê, neither ê to Ê, and so on.
- The maximum share path length is 600 characters (the entire path string including slashes)
- The share path cannot be blank
- You cannot have an empty folder name, that is, two consecutive slashes (for example, '/My//Corner/')
- Each individual folder in the path (that is, the content between the slashes) cannot exceed 255 characters

4.8.3 Share Comments

Share comments are optional, so they can be blank. The maximum character length of a share comment is 255 characters. Share comments can contain any character except for the following:

- “[double quote]
- ` [backquote]
- < [less than]
- > [greater than]

4.8.4 EVERYONE & ANONYMOUS Share Access Rights

With an **EVERYONE** access right, you still need to log in. Every local user with an account on the NSA can access this share using their username and password. Users with accounts on a domain server cannot access shares with **EVERYONE** access rights.

With **ANONYMOUS CIFS**, no login is required. If you enter a valid user name but wrong password, the session is rejected. If the user name is invalid, then the session is considered 'anonymous'.

With **ANONYMOUS FTP**, you must enter either 'anonymous' or 'ftp' as the user name. Any other name is considered a user name, so must be valid and have a corresponding correct password.

Note: If you are already logged into a share using your username and password, you will NOT be able to access a share that has **ANONYMOUS CIFS** or **ANONYMOUS FTP** only access rights (as these require 'no login'). If this is not your intention, it is recommended you set **EVERYONE AND ANONYMOUS CIFS** and/or **ANONYMOUS FTP** access rights to these type shares.

4.8.5 DFS

Distributed File System (DFS) is a network server component that makes it easier for you to find and manage data on your network. Through DFS, you can build a single hierarchical file system whose contents are distributed throughout your organization's WAN. It permits shares to be hierarchically connected to other Windows shares. Since DFS is a logical mapping, the physical location of data becomes transparent to your users and applications.

You can use DFS links when accessing the NSA using CIFS, not FTP.

4.8.6 Add A New Share Screen

Figure 26 Add a New Share

The following table describes the labels in this screen.

Table 22 Add Share

LABEL	DESCRIPTION
New Share Information	
Enabled	You must select this check box in order for a user or group to be able to access this share on the NSA.

Table 22 Add Share (continued)

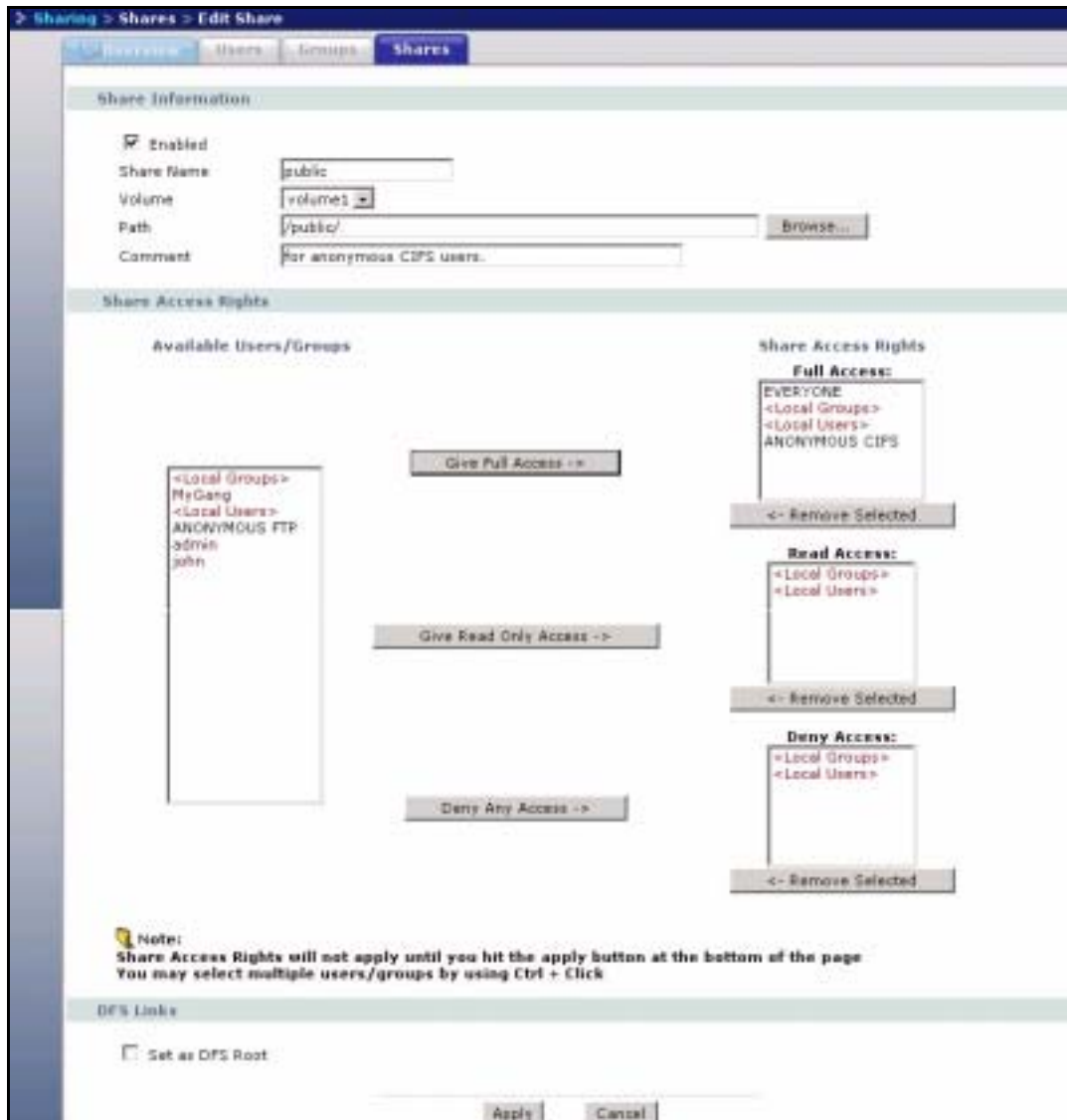
LABEL	DESCRIPTION
Share Name	Type a share name from 1 to 255 single-byte ASCII characters. The name cannot be the same as another existing local share. See Section 4.8.1 on page 60 for more information on share names.
Volume	You should have already created volumes (a single accessible storage area with a single file system) on the NSA.
Path	Type the location of the share on the NSA using forward slashes as branch separators. See Section 4.8.2 on page 61 for more information on share paths.
Comment	Type some suitable descriptive text to further identify the share (in addition to its name) on the network. The comment text appears next to the share folder in Windows. See Section 4.8.3 on page 62 for more information on share comments.
New Share Access Rights	Use this part of the screen to assign access rights (full, read only or deny) to users and/or groups. EVERYONE means every local user who has an account on the NSA. ANONYMOUS means every user including people who do NOT have accounts on the NSA. See Section 4.8.4 on page 62 for more information on EVERYONE and ANONYMOUS share access rights.
Available Users/ Groups	This box lists all users and groups created on the NSA.
Give Full Access ->	Select users and/or groups (you can select multiple users by holding the [Ctrl] key while you click) from the Available Users/Groups list box and then click this button to allow them full access (read, write and execute) to all files contained within this share.
Give Read Only Access ->	Select users and/or groups (you can select multiple users by holding the [Ctrl] key while you click) from the Available Users/Groups list box and then click this button to allow them read-only access (they cannot modify nor execute) to all files contained within this share.
Deny Any Access ->	Select users and/or groups (you can select multiple users by holding the [Ctrl] key while you click) from the Available Users/Groups list box and then click this button to deny them any access (they cannot read, modify nor execute) to all files contained within this share. This share is not visible to those users and/or groups who access the NSA via FTP. Note: Where access conflict arises between users and/or groups, the most restrictive access right applies.
Share Access Rights	These boxes list what users and/or groups have what access rights to this share.
Full Access:	Select users and/or groups (you can select multiple users by holding the [Ctrl] key while you click) from this list box and then click the Remove Selected button to no longer allow them access to files contained within this share. These users and/or groups are then available to have other access rights to this share if you want.
Read Access:	Select users and/or groups (you can select multiple users by holding the [Ctrl] key while you click) from this list box and then click the Remove Selected button to no longer allow them access to files contained within this share. These users and/or groups are then available to have other access rights to this share if you want.

Table 22 Add Share (continued)

LABEL	DESCRIPTION
Deny Access:	Select users and/or groups (you can select multiple users by holding the [Ctrl] key while you click) from this list box and then click the Remove Selected button to deny them access to files contained within this share. These users and/or groups are then available to have other access rights to this share if you want.
Remove Selected	Select users and/or groups (you can select multiple users by holding the [Ctrl] key while you click) from one of the Full Access , Read Only Access or Deny Access list boxes and then click this button to no longer allow them access to files contained within this share. These users and/or groups are then available to have other access rights to this share if you want.
DFS Links	Distributed File System (DFS) is a share of other shares.
Set as DFS Root	A DFS root is a local share that serves as the starting point and host to other shares. Any shared resource can be published into the DFS name space.
Link Name	The name can be the same as another existing DFS link name. Name restrictions are the same as for share names (see Section 4.8.1 on page 60).
Remote Server	Type the IP address or domain name of the remote server.
Remote Share Name	This name should follow the same restrictions as an NSA file name in order for it to work properly with the NSA.
Action	Click the corresponding button to add or remove a DFS link.
Apply	Click this button to save your changes back to the NSA.
Cancel	Click this button to begin configuring this screen afresh.

The following screen is an example of the default public share. Note that for anonymous CIFS users, no login is required (see [Section 4.8.4 on page 62](#) for more information).

Figure 27 Public Share



CHAPTER 5

Network

This chapter discusses the network screens.

5.1 Network Screens

This section gives an overview of the various features included in the network configuration screens.

Use the network screens to:

- View the network information
- Configure your TCP/IP information and DNS server address.
- Change your Windows/CIFS server name and workgroup name.
- Enable FTP and set connection limits.

5.2 Network Introduction

Click the **Network** link in the Navigation panel to access the **Network > Overview** screen. This is the first screen displayed.

Note: You can click on the edit icons to go to the appropriate page to change the settings, or you can click on the appropriate tabs or navigation panel links instead.

5.2.1 IP Address and Subnet Mask

Similar to the way houses on a street share a common street name, so too do computers on a LAN share one common network number.

Where you obtain your network number depends on your particular situation. If the ISP or your network administrator assigns you a block of registered IP addresses, follow their instructions in selecting the IP addresses and the subnet mask. The subnet mask specifies the network number portion of an IP address.

5.2.2 DHCP

DHCP (Dynamic Host Configuration Protocol, RFC 2131 and RFC 2132) allows individual clients to obtain TCP/IP configuration at start-up from a server. You can configure the NSA as a DHCP client which means it is set to receive an IP address from a DHCP server. The NDU can help you discover the IP address of the NSA.

Alternatively, configure a static IP address for the NSA.

5.2.3 Windows/CIFS

Common Internet File System (CIFS) is a standard protocol supported by most operating systems in order to share files across the network.

CIFS runs over TCP/IP but uses the SMB (Server Message Block) protocol found in Microsoft Windows for file and printer access; therefore, CIFS will allow all applications, not just Web browsers, to open and share files across the Internet.

5.2.4 FTP

File Transfer Protocol (FTP) is an Internet file transfer service that operates on the Internet and over TCP/IP networks. A system running the FTP server accepts commands from a system running an FTP client. The service allows users to send commands to the server for uploading and downloading files.

5.3 Network Overview Screen

Figure 28 Network > Overview



The following table describes the labels in this screen.

Table 23 Network > Overview

LABEL	DESCRIPTION
IP Information	
Mode	This field displays whether the NSA is receiving an IP address from a DHCP server (Dynamic) or whether it is assigned a static IP address.
DHCP Server	If the NSA is receiving an IP address from a DHCP server, this field displays the IP address of the DHCP (Dynamic Host Configuration Protocol) server. See Section 5.2.2 on page 70 for more details.
IP Address	This field displays the NSA IP address.
IP Subnet Mask	The subnet mask specifies the network number portion of an IP address. If you select Dynamic IP in the TCP/IP screen the subnet mask will be assigned by the DHCP server. If you select Static IP then your subnet mask will be what you type into this field. See Section 5.2.1 on page 69 for more details about IP subnet mask.
Default Gateway	If you select Dynamic IP in the TCP/IP screen the default gateway will be assigned by the DHCP server. If you select Static IP then you must type a gateway IP address in this field.
Windows/CIFS Information	
Server Name	This is the name of the NSA device.
Mode	This shows the Windows/CIFS mode, either Workgroup or Domain .
Workgroup Name	This field displays your workgroup name.
Domain Protocol	This field displays the windows domain protocol you are using. Select NT4 Domain or Active Directory Domain in the Windows/CIFS screen.
Domain	This is the domain name you have entered.
FTP Information	
Enable FTP	This field displays whether or not the NSA allows FTP connections.

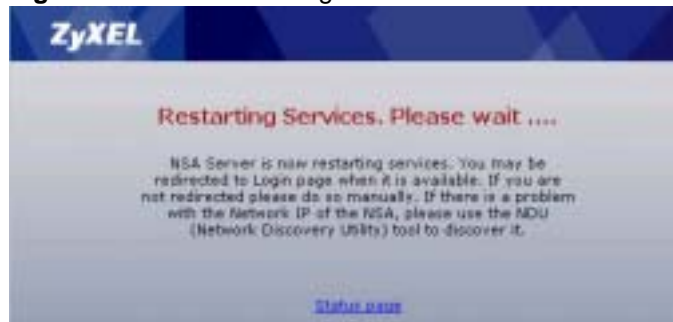
Table 23 Network > Overview (continued)

LABEL	DESCRIPTION
Connection Limit	This is the maximum number of sessions allowed to access the NSA simultaneously via FTP. A single user may have multiple concurrent sessions.
Idle Timeout	This field shows the length of time in seconds that the FTP connection can be idle before timing out.
Enable Anonymous	This displays whether users are allowed to log into the NSA using an 'FTP' user name or 'anonymous' without giving a password.

5.4 TCP/IP Screen

Use the **Network > TCP/IP** screen to an NSA dynamic or static IP address, subnet mask, default gateway and DNS servers.

Note: The NSA automatically restarts after you apply changes in the **TCP/IP** or **Windows/CIFS** screens.

Figure 29 NSA Rebooting

Click the **Network** link in the Navigation panel and then click the **TCP/IP** link or the **TCP/IP** tab to access the **Network > TCP/IP** screen.

Figure 30 Network > TCP/IP

The following table describes the labels in this screen.

Table 24 Network > TCP/IP

LABEL	DESCRIPTION
Server Name	
Server Name	This field shows the name you assigned to your NSA.
Modify	Click the Modify button to take you to the Windows/CIFS screen (the next tab) where you can change your server name.
Network IP Address	
Dynamic	Select the Dynamic checkbox to have a DHCP server automatically assign an IP address to your NSA. If none is assigned, then the NSA reverts to the default IP address of 192.168.1.3.
Static	Select the Static checkbox for the NSA to use fixed TCP/IP information. You MUST fill in all the following fields.
IP Address	Type an IP address in this field.
IP Subnet Mask	Type an IP subnet mask in this field.
Default Gateway	Type a default gateway address in this field.
DNS	DNS (Domain Name System) is for mapping a domain name to its corresponding IP address and vice versa. The DNS server is extremely important because without it, you must know the IP address of a machine before you can access it. If you have the IP address(es) of the DNS server(s), enter them.
Dynamic	Select the checkbox to have the DHCP server automatically assign a DNS server address to your NSA.
Static	Select the checkbox to choose a static DNS server address. Type the DNS server IP address(es) into the fields below.
Primary DNS Server	Type a primary DNS server IP address.

Table 24 Network > TCP/IP

LABEL	DESCRIPTION
Secondary DNS Server	Type a secondary DNS server IP address.
Apply	Click Apply to save your TCP/IP configurations. After you click Apply , the NSA restarts. Wait until you see the Login screen or until the NSA fully boots and then use the NDU to rediscover it.

5.5 Windows/CIFS

Use this screen to configure your CIFS settings. In this screen you can set your server name, your WINS server, and specify if your NSA is a part of a workgroup or domain.

Note: CIFS cannot be disabled on the NSA.

Note: The NSA automatically restarts after you apply changes in the **TCP/IP** or **Windows/CIFS** screens.

5.5.1 Workgroup Security Mode

A workgroup is a group of computers on a network that can share files. On the NSA, use Workgroup Security Mode if the user names and passwords for these computers are maintained on the NSA. This is suitable for users using the Common Internet File System (CIFS) protocol for remote file access in a small-to-medium sized office.

5.5.2 Windows Domain Security Mode

A domain is a group of computers that are part of a network and share a common directory database. On the NSA, use **Windows Domain Security Mode** if you want centralized management of shared resources, services and user on a centralized Windows-based domain controller. You can create users and groups on the centralized Windows-based domain controller such as an active server directory, and the NSA checks this list when authenticating users and/or groups that seek access to a share. This is suitable for a large number of CIFS users where accounts are stored on an external server.

A domain is organized in levels and is administered as a unit with common rules and procedures. Each domain has a unique name. You must be logged on as an administrator to your local computer and have a valid user name and password to join your computer to a domain. If you do not know which user name and password to use, contact your network administrator.

Note: The NSA time and date must be the same as the time and date on the external domain controller if the NSA is using one to import users and groups.

5.5.3 Windows/CIFS Screen

Figure 31 Network > Windows/CIFS_Workgroup

The screenshot shows the 'Network > Windows/CIFS' configuration window. At the top, there are tabs for 'Overview', 'SMB', 'Windows/CIFS', and 'FTP'. The 'Windows/CIFS' tab is selected. The 'Server Name' section contains the text: 'Please specify the name of the Server. Server name may contain only alphanumeric characters, minus signs("-"), and underscores("_"). It must begin with an alphabetic character and ends with an alphanumeric character.' Below this, the 'Server Name' field contains 'myNSA' with a '15 characters' limit indicator. The 'WINS' section has an empty 'WINS Server' field. The 'Windows/CIFS' section shows 'NSA is a member of' with a dropdown menu set to 'Workgroup'. Below that, the 'Workgroup Name' field contains 'WORKGROUP' with a '15 characters' limit indicator. An 'Apply' button is at the bottom.

Figure 32 Network > Windows/CIFS_Domain

The screenshot shows the 'Network > Windows/CIFS' configuration window. At the top, there are tabs for 'Overview', 'SMB', 'Windows/CIFS', and 'FTP'. The 'Windows/CIFS' tab is selected. The 'Server Name' section contains the text: 'Please specify the name of the Server. Server name may contain only alphanumeric characters, minus signs("-"), and underscores("_"). It must begin with an alphabetic character and ends with an alphanumeric character.' Below this, the 'Server Name' field contains 'myNSA' with a '15 characters' limit indicator. The 'WINS' section has an empty 'WINS Server' field. The 'Windows/CIFS' section shows 'NSA is a member of' with a dropdown menu set to 'Domain'. Below this, there is a 'Note' icon and the text: 'Domain Server Address must be an IP Address or a Pre-Win2k domain name'. The 'Windows Domain Protocol' dropdown is set to 'NT4 Domain'. Below that are three empty text input fields for 'Domain Server Address', 'Windows Domain Administrator', and 'Windows Domain Administrator Password'. An 'Apply' button is at the bottom.

The following table describes the labels in these screens.

Table 25 Network > Windows/CIFS

LABEL	DESCRIPTION
Server Name	
Server Name	Enter a name to identify your NSA on the network in this field. The NSA restarts after you change the NSA.
WINS	You can specify a WINS server which the NSA will use to resolve names to IP addresses.
WINS Server	Enter the WINS server name in this field.
Windows/CIFS	
NSA is a member of	A workgroup is a group of computers on a network that can share files. These user accounts are maintained on the NSA. A domain is a group of computers that are part of a network and share a common directory database. Domain users and groups are created on a centralized Windows-based domain controller. Select either Workgroup or Domain from the drop-down list box.
Workgroup Name	Type your workgroup name in this field if you selected Workgroup from the field above. The following fields apply if you selected Domain .
Windows Domain Protocol	Select a windows domain protocol if you selected Domain above. Choose NT4 Domain if your server uses a Windows NT operating system and Active Directory Domain if it uses a Windows 2000 or later operating system.
Domain Server Address	Type the IP address of the Windows server domain controller or a pre-Windows 2000 domain name.
Windows Domain Administrator	Administrator is the default Windows Domain Administrator .
Windows Domain Administrator Password	Type a password associated with the Windows Domain Administrator.
Apply	Click here to save your changes back to the NSA.

5.6 FTP Screen

Use this screen to configure your NSA FTP settings. In this screen you can enable or disable FTP, set a connection limit, idle timeout, and enable or disable anonymous FTP access. See [Section 5.2.4 on page 70](#) for more details on FTP.

Figure 33 Network > FTP

The following table describes the labels in this screen.

Table 26 Network > FTP

LABEL	DESCRIPTION
FTP	
Enable FTP	Select the Enable FTP checkbox to allow users to connect to the NSA via FTP; otherwise clear the check box.
Connection Limit	Enter the maximum number of concurrent connections allowed on the NSA in this field.
Idle Timeout	Enter the length of time that an FTP connection can be idle before timing out.
Enable Anonymous FTP Access	Select Enable Anonymous FTP Access to allow any user to log into the NSA using 'FTP' or 'anonymous' as a user name and no password. Any other name is considered a user name, so must be valid and have a corresponding correct password.
Apply	Click Apply to save your settings to the NSA.

CHAPTER 6

Storage

This chapter covers the **Storage** screens of the NSA.

Note: Snapshot and RAID 0 are not supported by the NSA at the time of writing (the first release), but they are included here as they will be supported in a later release.

6.1 Storage Introduction

Use the **Storage** screens to create and manage NSA internal and external volumes, disks and snapshots¹. See [Section 6.3 on page 81](#) for more information on volumes.

6.1.1 Snapshots

A snapshot is a backup of your NSA data on the NSA. If files within a volume become infected or corrupted, you can revert the volume back to a previous snapshot. You can continue to work, while the snapshot is taken. It's a good idea to save your open files first before taking a snapshot.

If a volume is restored to a previous snapshot, then ALL files in that snapshot are returned to the state they were in at the time of the snapshot.

The NSA uses EVMS (Enterprise Volume Management System) to create snapshots.

Note: Snapshots can be used on internal volumes only.

It's a good idea to take a snapshot of your data before you make a backup. Backups may require several hours depending on the amount of data you have to back up. It is not possible to run programs (like FDISK), that access the disk directly, while backup is running.

6.2 Storage Overview Screen

Click the **Storage** link in the Navigation panel to access the **Storage > Overview** screen. This is the first screen displayed.

1. Snapshot was not available at the time of writing.

Figure 34 Storage > Overview

The screenshot displays the 'Storage > Overview' interface. It is divided into three main sections: 'Volume', 'Disk', and 'External Disk'. The 'Volume' section is further split into 'Internal Volume' and 'External Volume'. The 'Internal Volume' table shows 'volume1' as 'Healthy' and 'volume2' as 'Degraded'. The 'External Volume' table shows 'ExtVolume1' as 'Down'. The 'Disk' section is split into 'Internal Disk' and 'External Disk'. The 'Internal Disk' table lists four disks (disk1-disk4) with their model names, volumes, configurations, capacities, and statuses (all 'OK'). The 'External Disk' table lists 'USB1' with its model name, volume, capacity, and status ('OK').

Internal Volume:					
Volume Name	Status	Disk Configuration	Disk Usage		
volume1	Healthy	RAID1	114.62 GB Total	0% (4.25 MB) Used	100% Free
volume2	Degraded	RAID1	111.39 GB Total	0% (536.00 KB) Used	100% Free

External Volume:					
Status	Volume Name	Disk Configuration	Disks	Disk Usage	
Down	ExtVolume1	REGULAR	USB1	N/A Total	0% (0.00 KB) Used 100% Free

Internal Disk:					
Disk Name	Model Name	Volume	Disk Configuration	Capacity	Status
disk1	HDS722512VLS480	volume1	RAID1	115.04 GB	OK
disk2	HDS722512VLS480	volume1	RAID1	115.04 GB	OK
disk3	ST3120827AS	volume2	RAID1	111.79 GB	OK
disk4	ST3120827AS	volume2	RAID1	111.79 GB	OK

External Disk:				
Disk Name	Model Name	Volume	Capacity	Status
USB1	USB 2.0 Storage Device	ExtVolume1	12.49 GB	OK

The following table describes the labels in this screen.

Table 27 Storage > Overview

LABEL	DESCRIPTION
Internal/External Volume	This table displays information on all internal volumes (created on NSA internal disk drives) and external volumes (created on external disk drives attached to the NSA USB port(s)). See the volume screen for field details.
Volume Name	The NSA creates the volume name automatically.
Status	This field shows whether the volume is Healthy, Resyncing, Waiting Resynch, Degraded or Down .
Disk Configuration	This field shows which data storage system the volume is using.
Disk Usage	This field shows how many bytes of space on the volume is being used.
Internal/External Disk	This table displays information on all internal disk drives and external disk drives (attached to the USB port(s)).
Disk Name	The NSA creates the disk name automatically depending on how many disks you installed in the NSA.
Model Name	This is the hard disk number that identifies the disk.
Volume	This field shows the volume to which the disk belongs.
Disk Configuration	This field shows the data storage system to which the disk belongs.
Capacity	This field shows the size of the disk in MB.

Table 27 Storage > Overview (continued)

LABEL	DESCRIPTION
Status	This field displays OK if the (physical) disk is readable and Down if no data can be read from it. If Down , the disk may need to be scanned for errors or replaced. If it needs to be repaired or replaced, then you will have to resynchronize the volume.
Snapshot	You can see information on snapshots you created on the NSA here.

6.3 Volumes

On an NSA, a volume is a storage area on a single disk or spread across a number of disks within a single file system. How you spread data across disks depends on if you use a RAID (Redundant Array of Independent Disks) method or SINGLE.

Note: All data is deleted if you re-create a volume.

You can specify volumes on the internal disks and external disks attached to the USB port(s).

- If you have four disks and are using **RAID 5**, then you can have one volume on the NSA (**RAID 5** uses all four disks for data parity and striping).
- If you have four disks and are using **RAID 1**, then you can have two volumes (you need to use two disks to create one **RAID 1** volume on the NSA). You could also use **RAID 1** on two disks and **RAID 0**¹ on the other two allowing you to have three volumes.
- Finally you could use **RAID 0** or **SINGLE** on all four disks allowing you to have up to four volumes.
- You can configure **SINGLE** or **Backup** on external USB disks. Choose **Backup** if you intend to use the backup utility to copy data from the NSA internal drives to the external USB drive. Before backup begins, the NSA first checks the drive for disk space and then scans for file system errors.

Note: You can spread a volume across internal disks but not between internal and external disks.

6.3.1 RAID

Redundant Array of Independent Disks (RAID) is a method of storing data on multiple disks to provide a combination of greater capacity, reliability, or speed.

The RAID levels supported on the NSA are:

1. Not available at the time of writing.

6.3.1.1 RAID 0¹

Level 0 is a striped disk array without fault tolerance. It provides data striping (spreading out blocks of each file across multiple disk drives) but no redundancy so if one disk fails the entire volume will be lost. The major benefit of RAID 0 is performance.

RAID level 0 can be configured with one or more disks, and its capacity is the size of the smallest disk multiplied by the number of disks you have configured at RAID 0 on the NSA. For example, if you have four disks of sizes 100 GB, 150 GB, 150 GB and 200 GB respectively in one RAID 0 volume, then the maximum capacity is 400 GB (4 * 100 GB, the smallest disk size) and the remaining space (300 GB) is unused.

Note: If one disk fails then all data in the volume is lost.

Note: RAID 0 was not available on the NSA at the time of writing. When it is available, you must use a disk 1-2 pair and/or a disk 3-4 pair; you cannot have four volumes at RAID 0.

6.3.1.2 RAID 1

RAID 1 uses mirroring and duplexing, so a RAID 1 volume needs an even number of disks (two or four for the NSA). All disk(s) (other than the first) are an exact mirror of the first. A two-disk RAID 1 volume can survive a one-disk failure and continue running. If a disk fails, the data is retrieved from the surviving disk.

Note: RAID 1 on the NSA supports a disk 1-2 pair and/or a disk 3-4 pair

RAID 1 capacity is limited to the size of the smallest disk in the RAID set. For example, if you have two disks of sizes 150 GB and 200 GB respectively in one RAID 1 volume, then the maximum capacity is 150 GB and the remaining space (200 GB) is unused.

6.3.1.3 RAID 5

RAID 5 provides the best balance of capacity and performance while providing data redundancy. It provides redundancy by striping data across three or more disks and keeping the parity information on one of the disks in each stripe. In case of disk failure, the surviving disks and the parity disk are used to reconstruct the lost data, providing that data transparently to the user application. When you replace the failed disk with a good disk, the reconstructed data is written out to the new disk, and when the resynchronization process is complete, the volume returns to its original state.

Note: You need four hard disks to use RAID 5 on the NSA.

The capacity of a RAID 5 volume is the smallest disk in the RAID set multiplied by one less than the number of disks in the RAID set. For example, if you have four disks of sizes 150 GB, 150 GB, 200 GB and 250 GB respectively in one RAID 5 volume, then the maximum capacity is 450 GB (3 * 150 GB, the smallest disk size) and the remaining space (300 GB) is unused.

1. Not available at the time of writing.

6.3.2 SINGLE

The RAID system stores the same data redundantly on multiple disks that nevertheless appear to the operating system as a single disk. SINGLE does NOT make disks appear as a single logical disk. SINGLE doesn't have any advantages over using separate disks independently and doesn't provide any of the fault tolerance or performance benefits of RAID. However data isn't striped across disks, so if one disk fails, then you just lose the data on that disk.

Note: You will lose data if you change your volume type without backing up first! For example if you originally have two disks configured at RAID 1, and you then buy two more disks and want to configure all four at RAID 5, you should first back up all your data on those disks (see the Genie Backup Manager utility on the included disk) and then restore your data later after you create the new volume type.

6.3.3 Volume Status

The status of a volume is determined by the file system. The status of a disk is determined by the physical disk. If a disk is down, then the volume to which the disk belongs will also be down or degraded if you're using RAID 1 or RAID 5.

The status of a volume shows as **Healthy** if all disks in the volume are OK and the file system is functioning properly.

The status of a volume shows as **Resynching** when you create or repair a RAID volume.

The status of a volume shows as **Waiting Resync** when there is already another volume resynchronizing. Only one volume can resynchronize at one time.

The status of a volume shows **Degraded** when a volume is currently down, but can be fixed.

The status of a volume shows **Down** when a volume is down and can NOT be fixed.

A down RAID volume cannot be used until you repair or replace the faulty disk(s) in the volume. Degraded means one of the disks in the RAID volume is not available but the volume can still be used. If there is already another volume resynchronizing, then you will see **Waiting Resync** as the volume status.

When a volume is degraded or down, all shares with share paths that use that volume are not accessible so users cannot transfer files to/from shares in that volume. The share appears as a folder in CIFS but a user cannot enter the folder to get or put data from or into it.

Note: There is no explicit message from CIFS that tells users their volume is degraded or down; the only indication is that they can no longer transfer files to/from the shares in the degraded volume. See your Quick Start Guide for more information on replacing a disk.

6.3.4 Resynchronizing a RAID 1 or 5 Volume

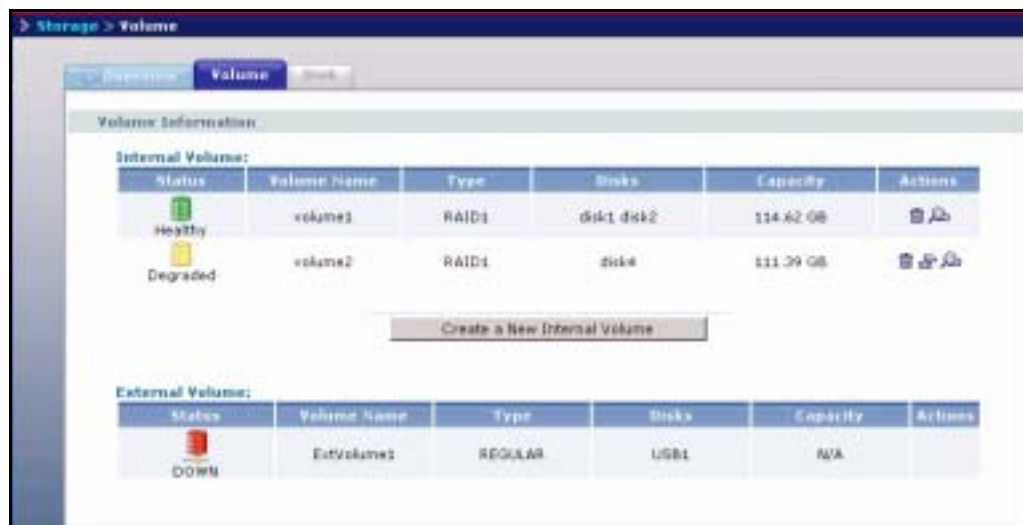
Resynchronizing a RAID 1 or 5 Volume is done block-by-block, so the time it takes depends more on the size of your hard drive(s) than the amount of data you have on them.

Note: You should not restart the NSA while the NSA is resynchronizing a volume as this will cause the synchronization to begin again after the NSA fully reboots.

Note: You can access data on a RAID volume while it is resynchronizing, but it is not recommended.

6.3.5 Volume Screen

Figure 35 Storage > Volume



The following table describes the labels in this screen.

Table 28 Storage > Volume

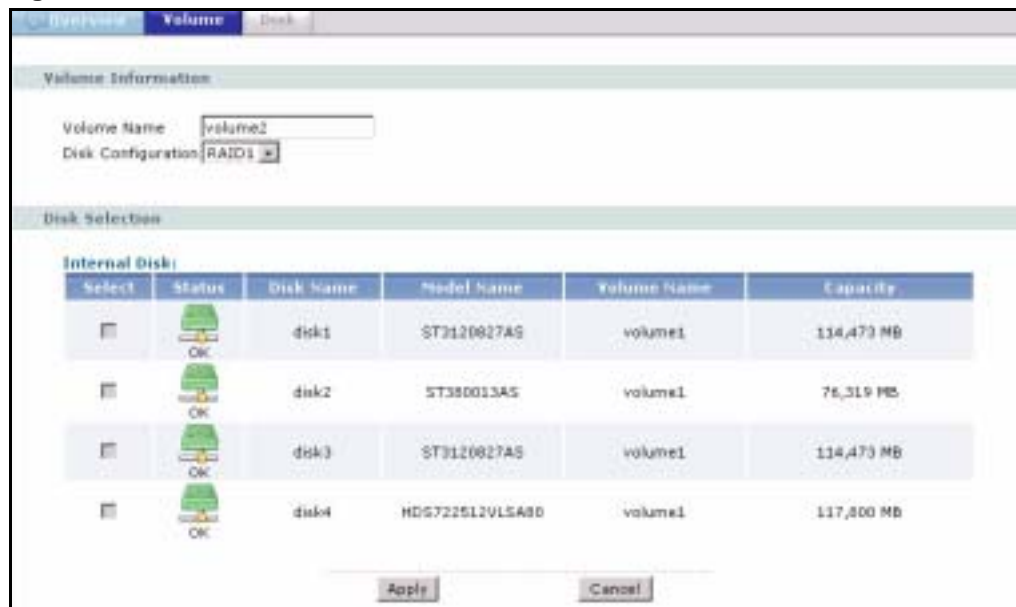
LABEL	DESCRIPTION
Volume Information	
Internal/External Volume:	These tables display information on volumes created on the NSA internal disk drives and on the NSA external disk drives attached to the USB port(s).
Status	This field shows Healthy , Resynching , Waiting Resync , Degraded or Down ; see Section 6.3.3 on page 83 . If a volume is degraded, you should click the Repair icon.
Volume Name	This field shows the NSA-generated name for the volume.
Type	This field shows what type of data storage system (a RAID type or SINGLE) the volume is using. For external drives, it may show REGULAR meaning that the NSA can read the volume but the volume wasn't created on the NSA.
Disks	This field shows the hard disks that are in the volume.

Table 28 Storage > Volume (continued)

LABEL	DESCRIPTION
Capacity	This field shows the total size of the volume.
Actions	This field allows you to remove or repair an internal volume and scan an external volume. Note: If you remove a volume (or change a volume type), all data in the volume disk(s) is erased.
Create a New Internal Volume	If you have disks available for a new volume, then click this button to create it.

6.4 Creating a New Internal Volume

Click the **Create a New Internal Volume** button in the **Volume** screen as shown in [Figure 35 on page 84](#) to create a new NSA internal disk drive volume.

Figure 36 Create a New Internal Volume

The following table describes the labels in this screen.

Table 29 Create a New Internal Volume

LABEL	DESCRIPTION
Volume Information	
Volume Name	Internal volume names are pre-defined. You cannot change them.

Table 29 Create a New Internal Volume (continued)

LABEL	DESCRIPTION
Disk Configuration	Use SINGLE or RAID 0 if you want maximum capacity and/or maximum speed for your disks, and/or you have other means of protecting your data. Use RAID 1 if you want to mirror primary data to another disk(s) with high performance. Use RAID 5 if you have four disks and you want to balance performance, hard disk capacity usage with data protection in case of disk failure.
Disk Selection	
Internal Disk:	This table lists all hard disks installed inside the NSA. Use the Select check box(es) to choose which disks should make up this volume. A disk can ONLY belong to one volume.
Apply	Click this button to save your changes back to the NSA.
Cancel	Click this button to begin configuring this screen afresh.

6.5 Disk

You can view information on the NSA internal disks and external disks attached to the USB port(s) in this screen.

6.5.1 Maintenance Mode

If you have no internal NSA volumes (disks), then the NSA is in **Maintenance Mode**. When the NSA is in this mode you cannot create users, groups or shares on the NSA. You must first go to the **Storage > Disk** screen and create an internal volume (assuming you already have an internal disk installed).

Note: You need to have at least one internal hard disk installed and an internal volume created before you can use an external hard disk.

6.5.2 External Disks

You may connect USB storage devices that support the following file systems to the NSA.

- Windows File Systems: NTFS (read only), FAT32 and FAT16.

If your USB storage device uses a NTFS file system, then the NSA can read files from it, but you cannot write files to it. If you want to be able to write files to that storage device, then you should back up all data on the device (to an internal drive for example) and then click the **Initialize** icon for the NSA to create an XFS volume on the (external) hard drive. You can then both read and write to that hard drive and restore your data to it.

- Linux File Systems: EXT2, EXT3 and XFS

Note: Although the NSA can read previously-stored files and folders using double-byte characters (such as Chinese), it does not allow you to write new ones to an external drive using double-byte characters.

6.5.3 Disk Replacement Restrictions

See the Quick Start Guide for information on replacing disks in the NSA. When replacing a disk in a degraded or down RAID volume, the new disk must be at least the same size or bigger than the other disks that are already in the RAID volume, so as all data in the volume can be restored.

For example, if you have RAID with 250 GB disks, you must put in a 250 GB or bigger disk as a replacement in order to restore all original data in that volume. If you put a bigger disk, the extra space on the disk will not be used.

AFTER replacing the disk, go to the **Storage>Disk** page and click the **Repair** icon next to the new disk.

Note: The NSA does not repair a disk automatically when you replace it; you must click **Repair**.

6.5.4 Disk Replacement and Volume Labels

When you create a volume, the NSA writes the volume label to the disk. It is recommended that you first delete a volume using the NSA web configurator before removing its disk(s). Deleting a volume removes volume label information on its disk(s). If you remove a disk(s) without deleting its volume and you later put the disk(s) back in a different volume, problems may occur.

For example, suppose you have two disks, Disk A and Disk B and you create two **SINGLE** volumes, volume1 (with Disk A) and volume2 (Disk B). Later you remove Disk A and replace it with another disk, Disk C and you re-create volume1. (You did not delete volume1 when you removed Disk A.) Later you replace Disk B with Disk A. Disk A still retains the volume1 label, so at this point there is a volume conflict since both Disk A and Disk C have the volume1 label but the NSA will only show ONE of the two volumes. Follow this procedure if a volume conflict occurs:

6.5.4.1 Volume Conflict Procedure

- 1 Shut down the NSA.
- 2 Remove the disk(s) in one conflicting volume. The other disk(s) that are in the other conflicting volume must remain connected.
- 3 Restart the NSA.
- 4 Open your browser and connect to the web configurator; verify that the volume is properly recognized.
- 5 Save a backup of this volume.

- 6 Once you have made the backup, go to **Storage > Volume** and delete this volume.
- 7 Shut down the NSA.
- 8 Put back the disk(s) you removed in step 1.
- 9 Restart the NSA.
- 10 The original volume should be visible in the web configurator and the previously conflicting volume should be shown as an available disk.
- 11 Go to **Storage > Volume** and create a new volume on the available disk.
- 12 Once the new volume is successfully created, restore your backup data (step 5) onto this new volume.

Conflicting volumes may also arise if you use **SINGLE** and/or **RAID 1**.

Note: To avoid conflicting volumes, delete a volume before you remove its disk(s).

6.5.5 Disk Screen

Figure 37 Storage > Disk

The screenshot shows the 'Storage > Disk' web interface. It has three tabs: 'Devices', 'Volume', and 'Disk'. The 'Disk' tab is active, displaying 'Disk Information'. There are two main sections: 'Internal Disk' and 'External Disk'. The 'Internal Disk' section contains a table with columns: Status, Disk Name, Model Name, Volume, Disk Configuration, and Capacity. It lists four disks (disk1, disk2, disk3, disk4) in RAID1 configurations. The 'External Disk' section contains a table with columns: Disk Name, Model Name, Volume, Capacity, Status, and Actions. It lists one USB1 device.

Internal Disk:					
Status	Disk Name	Model Name	Volume	Disk Configuration	Capacity
OK	disk1	HDS722512VLSA80	volume1	RAID1	115.04 GB
OK	disk2	HDS722512VLSA80	volume1	RAID1	115.04 GB
OK	disk3	ST3120827AS	volume2	RAID1	111.79 GB
OK	disk4	ST3120827AS	volume2	RAID1	111.79 GB

External Disk:					
Disk Name	Model Name	Volume	Capacity	Status	Actions
USB1	USB 2.0 Storage Device	ExtVolume1	12.69 GB	OK	[Icons]

The following table describes the labels in this screen.

Table 30 Storage > Disk

LABEL	DESCRIPTION
Disk Information	
Internal/External Disk:	These tables display information on the NSA internal and external disk drives (attached to the USB port(s)).

Table 30 Storage > Disk (continued)

LABEL	DESCRIPTION
Disk Name	<p>This field shows disk1, disk2, disk3 and/or disk4 for disks installed in the NSA disk trays labelled 1, 2, 3 and 4 respectively.</p> <p>It shows USB1, USB2 and/or USB3 for external USB disks; USB ports are not numbered, so USB1 represents the first device you connected to the NSA, USB2 the second and so on. If you're unsure of which external disk is connected to which port, then use the Locate icon to cause a LED on the external disk to blink.</p>
Model Name	This is the hard drive model number that uniquely identifies a hard drive.
Volume	This field shows which volume the disk belongs to. It shows No Volume if it does not (yet) belong to a volume.
Disk Configuration	This shows RAID 0 , RAID 1 , RAID 5 , SINGLE depending on what the volume to which the internal disk belongs to is configured. It shows None if the internal disk does not belong to a volume.
Capacity	This field shows the size of the hard disk.
Status	This field shows if the hard disk is functioning normally.
Action	<p>Click the Scan Disk icon to scan a hard disk drive for bad sectors and file system errors.</p> <p>Note: All users must disconnect from the NSA before the disk scan can begin.</p> <p>For external hard disks, there are additional Disconnect, Locate and Initialize icons.</p> <p>Make sure to click the Disconnect icon before you remove an external drive so that you do not lose data that is being transferred to or from that hard drive.</p> <p>Click the Locate icon to cause the corresponding USB LED on the NSA to blink.</p> <p>Click the Initialize icon for the NSA to create a volume on the (external) hard drive.</p>

CHAPTER 7

Maintenance

This chapter discusses the **Maintenance** screens.

7.1 Maintenance Overview

Use the maintenance screens to:

- View system information
- Set the NSA date and time
- View logs and configure where e-mail logs should be sent via e-mail
- Change your password and configure HTTPS
- Manage the NSA configuration file
- Upload new firmware
- Restart or shut down your NSA

Click the **Maintenance** link in the Navigation panel to access the **Maintenance > Overview** screen. This is the first screen displayed.

7.1.1 HTTPS and SSL

HTTPS is HyperText Transfer Protocol over Secure Socket Layer, or HTTP over SSL. For more information about these protocols see [Section 7.4.1 on page 96](#).

7.1.2 Maintenance Overview Screen

Figure 38 Maintenance > Overview



The following table describes the labels in this screen.

Table 31 Maintenance > Overview

LABEL	DESCRIPTION
Date & Time	
Current Time	This field displays the time of your NSA. The time is updated periodically from the time server.
Current Date	This field displays the date of your NSA. The date is updated periodically from the time server.
Current Time Zone	This is the time zone of your location. This displays the time difference between your time zone and Greenwich Mean Time (GMT).
Time Server Address	This is the IP address or URL of your time server.
Log Alert	
Email Alert Frequency	This field displays how often the NSA should send e-mail alerts.
Primary Email Address	This field displays your primary e-mail address. It is necessary to enter your primary e-mail address in the Maintenance > Log Alert screen.
Secondary Email Address	This field displays your secondary e-mail address.
Outgoing Mail Server (SMTP)	This field displays the IP address of your outgoing mail server.
Security	
HTTPS Status	This field displays if HTTPS is enabled or disabled. You can click the Use Secure Connection checkbox in the Maintenance > Security screen to change this setting.

Table 31 Maintenance > Overview (continued)

LABEL	DESCRIPTION
SSL Certificate	This field displays what type of SSL certificate your system is using. You can modify SSL by loading a different certificate in the Maintenance > Security screen.
Firmware	
Firmware Version	This field displays the version number of the firmware for your NSA.

7.2 Date/Time

Use this screen to select a time zone and a time server from which your NSA can get the time. This time is then used in NSA logs and alerts.

Note: The NSA time and date must be the same as the time and date on the external domain controller if the NSA is using one to import users and groups.

7.2.1 Pre-defined NTP Time Servers List

When you turn on the NSA for the first time, the date and time start at 2000-01-01 00:00:00. The NSA then attempts to synchronize with one of the following pre-defined list of time servers. A time server is a server that keeps the correct time. It can assign time to the NSA.

The NSA tries to connect to the following pre-defined list of time servers if you do not specify one or it cannot synchronize with the time server you specified.

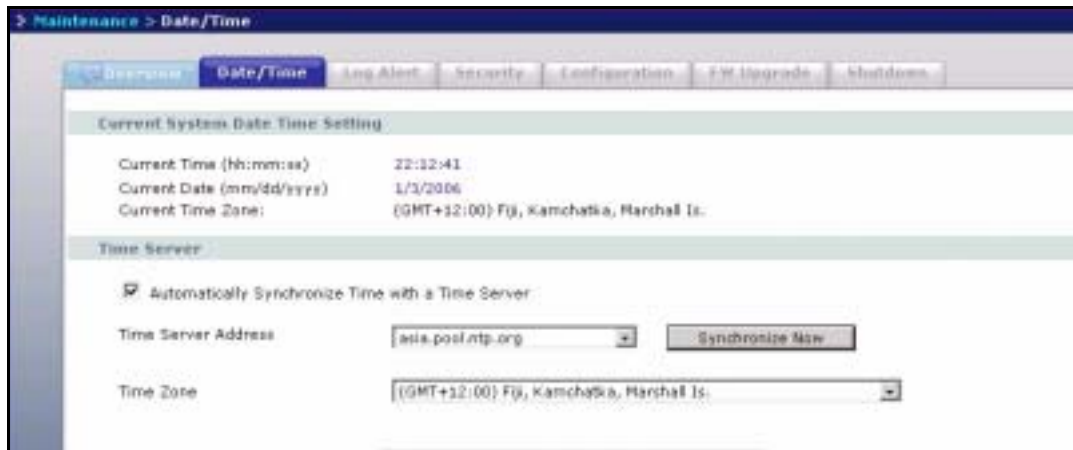
Note: These are the time servers available on the NSA at the time of writing.

Table 32 Default Time Servers

ntp.nasa.gov
pool.ntp.org
asia.pool.ntp.org
a.ntp.alphazed.net

7.2.2 Date/Time Screen

Click the **Maintenance** link in the Navigation panel and then click the **Date/Time** link or the **Date/Time** tab to access the **Maintenance > Date/Time** screen.

Figure 39 Maintenance > Date/Time

The following table describes the labels in this screen.

Table 33 Maintenance > Date/Time

LABEL	DESCRIPTION
Current System Date Time Setting	
Current Time	This field displays the time of your NSA.
Current Date	This field displays the date of your NSA.
Current Time Zone	This field displays the time zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT).
Time Server	
Automatically Synchronize Time with a Time Server	Select this checkbox to have the NSA get the time and date from the time server you select in the Time Server Address field.
Synchronize Now	Click this button for the NSA to retrieve the correct time from the configured time server right away.
Time Server Address	Select a time server from the drop-down list box or select Specify my own time server and enter the time server you wish to use in the field below. Check with your ISP/network administrator if you are unsure of this information.
Time Zone	Choose the time zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT).
Apply	Click Apply to confirm your settings.

7.3 Log Alert Screen

Use this screen to set how often the NSA should e-mail alerts, to where and via what e-mail server. An alert is an event that requires administrator attention.

Click the **Maintenance** link in the navigation panel and then click the **Log Alert** link or the **Log Alert** tab to access the **Maintenance > Log Alert** screen.

Figure 40 Maintenance > Log Alert

The screenshot shows the 'Log Alert' configuration page. At the top, there are tabs for 'Log Alert', 'Security', 'Configuration', 'Firmware Upgrade', and 'Shutdown'. The main section is titled 'Log Alert Email Settings'. It includes a 'Send Email Alerts:' section with radio buttons for 'Never' (selected) and 'Whenever an Error Occurs'. Below this is a checkbox for 'also in a' followed by a dropdown menu and the text 'log summary email'. There are input fields for 'Primary Email Address (required)', 'Secondary Email Address (optional)', 'Outgoing Mail Server (SMTP)', 'SMTP User Name', 'Password', and 'From Email Address'. A checkbox for 'Use SMTP Authentication' is checked. At the bottom, there is a checkbox for 'After applying settings, Send a test e-mail' and a 'View Current Log File' button.

The following table describes the labels in this screen.

Table 34 Maintenance > Log Alert

LABEL	DESCRIPTION
Log Alert Email Settings	
Send Email Alerts	This section allows you to set the e-mail alert options. You can decide how often to send e-mail alerts, to whom, and via which mail server.
Never	Select Never to not send e-mail alerts at all.
Whenever an Error Occurs	Select this option to only send e-mail alerts whenever a critical error occurs.
also in a (daily/weekly/monthly) log summary email	There are at most 128 entries in the log. Older logs are removed by the system. Select daily , weekly or monthly to determine how often e-mail alerts should be sent along with log summaries. Summary e-mail contains warnings logs.
Primary Email Address	Type the e-mail address of the person who should receive alerts.
Secondary Email Address	Type the e-mail address of another person who should receive alerts if you want.
Outgoing Mail Server (SMTP)	Type the IP address or URL of the mail server through which mail is sent.
Use SMTP Authentication	Select this check box if your e-mail server requires a user name and password.
SMTP User Name	Type your e-mail server user name here.
Password	Type your e-mail server password here.
From Email Address	Type the e-mail address of the sender of alerts here. Use an administrator e-mail address for example.

Table 34 Maintenance > Log Alert (continued)

LABEL	DESCRIPTION
After applying settings, send a test e-mail	Select this checkbox to send a test e-mail (after you click Apply). Use this to test if the destination e-mail address and mail server addresses are reachable and correct.
View Current Log File	When you click the View Current Log File button you go to the System Status > System Log screen. It shows you your log history and allows you to filter which types of logs you want to see as well as purge the list.
Apply	Click Apply to save your settings.

7.4 Security

Use this screen to change the admin password and elect to allow only HTTPS web connections to the NSA.

7.4.1 Introduction to HTTPS

HTTPS (HyperText Transfer Protocol over Secure Socket Layer, or HTTP over SSL) is a web protocol that encrypts and decrypts web pages. Secure Socket Layer (SSL) is an application-level protocol that enables secure transactions of data by ensuring confidentiality (an unauthorized party cannot read the transferred data), authentication (one party can identify the other party) and data integrity (you know if data has been changed).

HTTPS relies upon certificates, public keys, and private keys.

HTTPS is used on the NSA so that you may securely access the NSA using the web configurator. The SSL protocol specifies that the SSL server (the NSA) must always authenticate itself to the SSL client (the computer which requests the HTTPS connection with the NSA), whereas the SSL client only should authenticate itself when the SSL server requires it to do so. You must apply for a certificate for the browser from a CA that is a trusted CA on the NSA.

Note: If you select **Only Use Secure Connection (HTTPS)**, then the NSA allows HTTPS connections only. HTTP connection attempts are forwarded to HTTPS. If you clear **Only Use Secure Connection (HTTPS)**, then the NSA allows both HTTP and HTTPS connections.

7.4.2 Security Screen

Click the **Maintenance** link in the Navigation panel and then click the **Security** link or the **Security** tab to access the **Maintenance > Security** screen.

Figure 41 Maintenance > Security

The following table describes the labels in this screen.

Table 35 Maintenance > Security

LABEL	DESCRIPTION
Password	
Old Password	Type your old password in this field.
New Password	Type your new password in this field.
Retype to Confirm	Retype your new password in this field to confirm it.
Apply	Click Apply to confirm your password change.
Secure Connection	
ONLY Use Secure Connection (HTTPS)	Select the checkbox to only allow secure web (HTTPS) connections to the NSA. HTTP connection attempts are forwarded to HTTPS. Clear the checkbox to allow both HTTP and HTTPS connections.
Apply	Click Apply to confirm your secure connection change.

7.5 Configuration

Use the **Configuration** screen to back up or restore the NSA configuration settings and enable or disable the hardware reset button.

7.5.1 Configuration Screen

Click the **Maintenance** link in the Navigation panel and then click the **Configuration** link or the **Configuration** tab to access the **Maintenance > Configuration** screen.

Figure 42 Maintenance > Configuration

The following table describes the labels in this screen.

Table 36 Maintenance > Configuration

LABEL	DESCRIPTION
Backup Current Configuration Settings	
Backup	Click Backup to save the current configuration of the NSA to your computer. A pop-up screen appears asking you to confirm. Click OK to continue or Cancel to quit.
Restore Configuration	After you restore a configuration, if a share path does not exist, then it appears be in red.
Browse	Click Browse to locate a previously-saved configuration file.
Restore	Click Restore to load the previously-saved configuration file to the NSA. This replaces your current NSA configuration settings with the settings in the previously-saved configuration file. A pop-up screen appears asking you to confirm. Click OK to continue or Cancel to quit.
Hardware Reset Button	This button resets the NSA to the default IP address, and default admin password. Hold the button in for six seconds to complete the reset. The NSA DIAG LED blinks quickly for three seconds when the reset is complete.
Enable/Disable Hardware Reset Button	Click Enable Hardware Reset Button to allow you to be able to use the physical hardware reset button on the NSA. When the button on the screen reads Enable , it means the reset button on the NSA is disabled. Alternatively, when the screen button reads Disable Hardware Reset Button , it means the button on the NSA is already enabled. If you enable the reset button, a pop-up screen appears asking you to confirm. Click OK to continue or Cancel to quit.

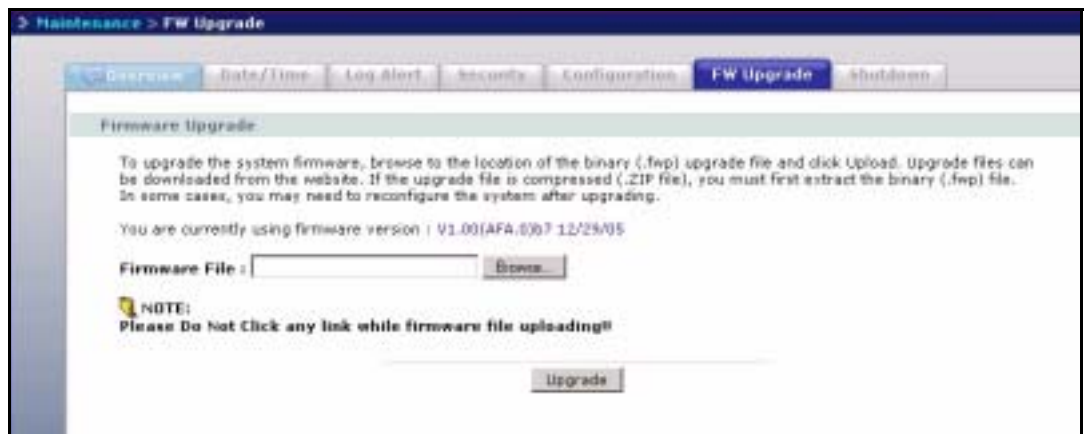
7.6 Firmware Upgrade

Use this screen to upgrade the NSA firmware. You should first have downloaded the latest firmware files from the ZyXEL website.

7.6.1 Firmware Upgrade Screen

Click the **Maintenance** link in the Navigation panel and then click the **FW Upgrade** link or the **FW Upgrade** tab to access the **Maintenance > FW Upgrade** screen.

Figure 43 Maintenance > FW Upgrade



The following table describes the labels in this screen.

Table 37 Maintenance > FW Upgrade

LABEL	DESCRIPTION
Firmware Upgrade	
Firmware File	Type the location of the firmware file you want to upload
Browse	Click Browse to find the file on your computer
Upgrade	Click Upgrade to upload the new firmware. The NSA automatically restarts after you upgrade. Wait until the restart completes before accessing the NSA again. If you interrupt the upgrade, then the NSA may become unusable.

7.7 Shutdown

Use this screen to turn off the NSA or perform a software restart. A software restart is faster than turning the NSA off and then turning it on again. Before shutting down or restarting, check the **System Status > Active Sessions** screen to make sure that no one is logged into the NSA or transferring files to or from the NSA.

7.7.1 Shutdown Screen

Click the **Maintenance** link in the Navigation panel and then click the **Shutdown** link or the **Shutdown** tab to access the **Maintenance > Shutdown** screen.

Figure 44 Maintenance > Shutdown



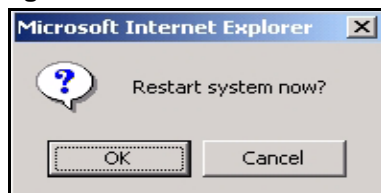
The following table describes the labels in this screen.

Table 38 Maintenance > Shutdown

LABEL	DESCRIPTION
System Shutdown	
Restart	Click Restart to have the device perform a software restart.
Shutdown	Click Shutdown to shut down the system and restart it again later.

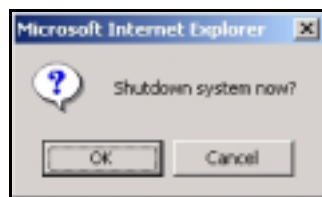
When you click the **Restart** button a pop-up screen will appear asking you to confirm. Click **OK** to continue or **Cancel** to quit the restart.

Figure 45 Maintenance > Shutdown > Confirm Restart



When you click the **Shutdown** button a pop-up screen will appear asking you to confirm. Click **OK** to continue or **Cancel** to quit the shutdown.

Figure 46 Maintenance > Shutdown > Confirm Shutdown



APPENDIX A

Product Specifications

See also the Getting to Know Your NSA chapter for a general overview of the key features.

Specification Tables

The NSA-2400 hardware specifications are shown in the following table.

Table 39 NSA-2400 Hardware Specifications

IP Address	192.168.1.3 if the NSA cannot get an IP address from a DHCP server.
Subnet Mask	255.255.255.0 (24 bits) if the NSA cannot get a subnet mask from a DHCP server.
Default Username	admin
Default Password	1234
Dimensions	140(W)*300(D)*305(H) mm
Weight	7.8kg
Disk Trays	Four
Compatible Hard Disks ^a	SATA-I compatible such as Seagate, Samsung, WD, Hitachi and Maxtor. The NSA recognizes SATA-II compatible drives but at SATA-I speeds.
UPS	The NSA supports APC Uninterruptable Power Supply
CPU	VIA CPU (1.3 GHz)
CPU Operating Temperature	0 ^o to 85 ^o C
Ports	
Ethernet	One auto-negotiating, auto MDI/MDI-X 10/100/1000 ^b Mbps RJ-45 Ethernet port (10 Base-T/100 Base-TX/1000 Base-T)
USB v2.0 Storage	Two ports on rear panel and one on front panel. Windows: NTFS (read only), FAT32 and FAT16 Linux: EXT2, EXT3 and XFS
LEDs	PWR, SYS, DIAG and LAN
Reset Button	Restores factory default IP address and admin password (1234)
Operating Temperature	0 ^o C ~ 50 ^o C
AC Input	Voltage: 100 - 240 V at 50 - 60 Hz Current: 2 A
Storage Temperature	-30 ^o C ~ 60 ^o C
Operating Humidity	20% ~ 95% RH (non-condensing)
Storage Humidity	20% ~ 95% RH (non-condensing)
Certifications	EMC: FCC Class B, CE-EMC Class B, C-Tick Class B, VCCI Class B Safety: CSA International, CE EN60950-1

- a. Hard drives may not be included with your NSA.
- b. Use an 8-wire Ethernet cable for Gigabit connections.

The NSA-2400 firmware specifications are shown in the following table

Table 40 NSA-2400 Firmware Specifications

File Storage System	SINGLE, RAID 0 ^a , 1, 5
Network Protocols	TCP/IP, UDP/IP DHCP Client FTP HTTP
File Management	Distributed File System (DFS) Create/Delete System Volume
Network File Sharing Protocol	CIFS/SMB for Windows and Mac OSX HTTP for web browser FTP
Network Security	Authentication Share level Active Directory Services (ADS) Encrypted Network Login
Supported Clients	Windows 2000 Professional/Server Windows XP Home/Professional Windows Me Linux
Max no. of Users allowed	200 ^b
Maximum number of concurrent FTP sessions	40 ^b
Maximum number of concurrent CIFS sessions	50 ^b
System Management	Remote Management via Web Configurator (HTTP) Secure Remote Management via Web Configurator (HTTPS) NSA Discovery Utility (NDU) E-mail alerts
Logging/Monitoring	Centralized Logs
Firmware Upgrade	Web Configurator
Web Browsers Supported	Internet Explorer 6.0 and later versions. Firefox 1.07 and later versions.

- a. Not available at the time of writing.
- b. Limits may vary depending on user-share resource usage.

Power Consumption

The NSA-2400 was tested using the specified power sources with the external power adapter and with four hard drives installed.

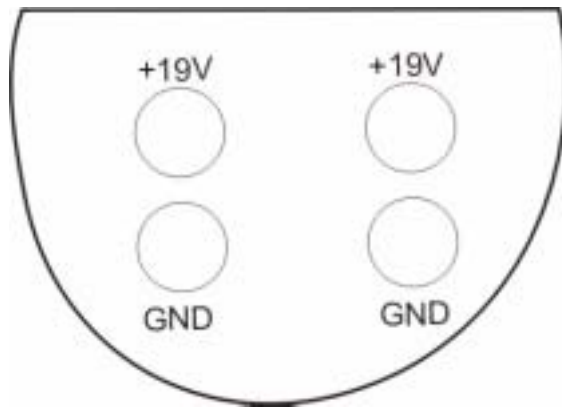
Note: This table is a laboratory test of NSA-2400 power consumption for your reference only.

Table 41 Power Consumption in Watts (W)

POWER SOURCE	SYSTEM BOOT UP	SYSTEM READ/WRITE	SYSTEM IDLE
240V/50Hz	103 (peak)	70 (peak)	48.6
120V/60Hz	105 (peak)	72 (peak)	47
100V/60Hz	102 (peak)	74 (peak)	47.3

This is the external power adaptor pinout specification

Figure 47 Power Adaptor Pinout.



APPENDIX B

Log Messages

This appendix shows some NSA-2400 log messages.

Log Messages

Table 42 Log Messages

SEVERITY	MESSAGE	ARGUMENT(S)			
SECURITY					
INFO	User {0} successfully log in from {1}	User name	IP		
INFO	User {0} attempted to login from {1}	User name	IP		
INFO	User {0} changed password	User name			
CRIT	Admin password changed				
WARNING	Failed login attempt from NDU at {0}	IP			
INFO	Admin log in from NDU at {0}	IP			
CRIT	Reset button pressed. Admin password and IP reset to factory default				
INFO	A new randomly generated password was e-mailed to admin				
CRIT	Unable to create new login in database {0}	errorMsg			
ERROR	Failed to change system user's password				
WARNING	{0} session IP changed from {1} to {2} ^a	User name	Original IP	New IP	
WARNING	The User Agent (Browser Program) for {0} session has changed since first login. ^b	User name			
WARNING	Failed to update database on last access time for login				
FTP					
INFO	User {0} log in from {1}	User name	IP		
INFO	User {0} log out	User name			
INFO	Maximum connection limit changed to {0}	Connection limit			
INFO	Idle timeout changed to {0} seconds	Idle timeout			
INFO	Anonymous access {0}	Enabled/disabled			
INFO	FTP service {0}	Enabled/disabled			
INFO	FTP server restarted				
WARNING	Failed log in attempt from user {0} at {1}	User name	IP		
ERROR	Failed to mount shares for user {0}	User name			
TCPIP					

Table 42 Log Messages (continued)

SEVERITY	MESSAGE	ARGUMENT(S)		
INFO	IP changed to {0}	IP		
INFO	Changed to {0} IP	Dynamic/Static		
INFO	DHCP server assigned IP to {0}	IP		
ERROR	Failed to obtain dynamic IP. Revert to 192.168.1.3			
INFO	Set server name to {0}	Server name		
INFO	IP changed to {0} by NDU	IP		
INFO	Changed to {0} IP by NDU	Dynamic/Static		
CIFS				
INFO	Join workgroup {0}	Workgroup name		
INFO	Join domain {0}	Domain name		
STORAGE				
INFO	{0} created on {1} using {2} with {3} snapshot space	Volume name	Disks config	Snapshot%
INFO	{0} deleted from {1}	Volume name	Disks	
ERROR	Failed to create {0}	Volume name		
ERROR	Failed to mount {0}	Volume name		
INFO	{0} mounted	Volume name		
ERROR	Failed to delete {0}	Volume name		
INFO	Start scanning {0}	Volume name		
INFO	Scanning {0} completed	Volume name		
INFO	Scanning {0} cancelled	Volume name		
ERROR	Scanning {0} failed	Volume name		
ERROR	Failed to cancel scanning {0}	Volume name		
INFO	Repairing RAID {0} [{1}, {2}]	Volume name	Configuration	Disks
INFO	Repairing RAID{0} completed [{1}, {2}]	Volume name	Configuration	Disks
ERROR	Repairing RAID{0} failed [{1}, {2}]	Volume name	Configuration	Disks
INFO	External disk {0} attached	Disk name		
INFO	External disk {0} detached	Disk name		
INFO	Scanning external disk {0}	Disk name		
INFO	Scanning external disk {0} completed	Disk name		
ERROR	Scanning external disk {0} failed	Disk name		
INFO	Scanning external disk {0} cancelled	Disk name		
ERROR	Failed to cancel scanning external disk {0}	Disk name		
INFO	RAID resync completed			
CRIT	{0} on server {1} [{2}] failed. Please check.	Disk name	Hostname	IP
SYSTEM				
INFO	Set system time to {0}	Date/time		
INFO	Change time zone to {0}	Time zone		
INFO	Change time server to {0}	Time server IP		
INFO	Synchronize with time server {0}	Time server IP		

Table 42 Log Messages (continued)

SEVERITY	MESSAGE	ARGUMENT(S)		
INFO	Create configuration backup file			
INFO	Restore configuration from file {0}	Configuration file name		
INFO	{0} hardware reset	Enabled/disabled		
INFO	Upgrade firmware to version {0}	Firmware version		
INFO	Shutting down system			
INFO	Starting up system			
CRIT	CPU temperature over 90 degree C			
ERROR	Unable to convert date time format			

- a. IP of a web configurator session changed
- b. Browser type of the same web configurator session changed.

Appendix C

Setting up Your Computer's IP Address

All computers must have a 10M or 100M Ethernet adapter card and TCP/IP installed.

Windows 95/98/Me/NT/2000/XP, Macintosh OS 7 and later operating systems and all versions of UNIX/LINUX include the software components you need to install and use TCP/IP on your computer. Windows 3.1 requires the purchase of a third-party TCP/IP application package.

TCP/IP should already be installed on computers using Windows NT/2000/XP, Macintosh OS 7 and later operating systems.

After the appropriate TCP/IP components are installed, configure the TCP/IP settings in order to “communicate” with your network.

Windows 95/98/Me

Click **Start**, **Settings**, **Control Panel** and double-click the **Network** icon to open the **Network** window.

Figure 48 WIndows 95/98/Me: Network: Configuration

Installing Components

The **Network** window **Configuration** tab displays a list of installed components. You need a network adapter, the TCP/IP protocol and Client for Microsoft Networks.

If you need the adapter:

- 1 In the **Network** window, click **Add**.
- 2 Select **Adapter** and then click **Add**.
- 3 Select the manufacturer and model of your network adapter and then click **OK**.

If you need TCP/IP:

- 1 In the **Network** window, click **Add**.
- 2 Select **Protocol** and then click **Add**.
- 3 Select **Microsoft** from the list of **manufacturers**.
- 4 Select **TCP/IP** from the list of network protocols and then click **OK**.

If you need Client for Microsoft Networks:

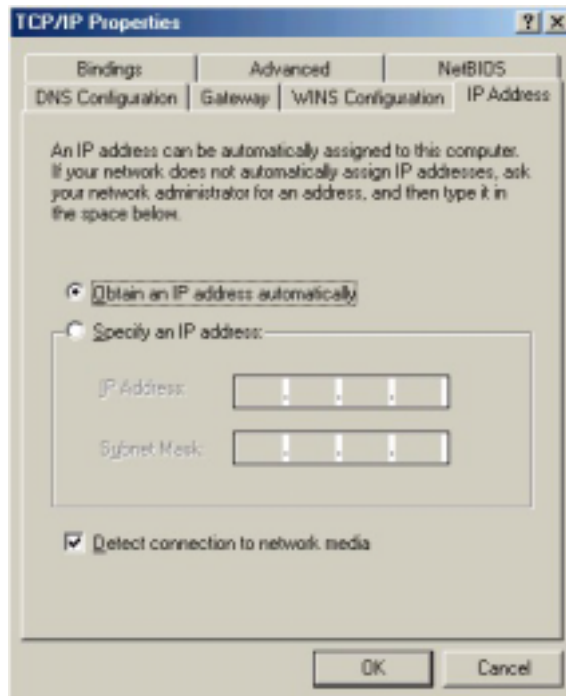
- 1 Click **Add**.
- 2 Select **Client** and then click **Add**.

- 3 Select **Microsoft** from the list of manufacturers.
- 4 Select **Client for Microsoft Networks** from the list of network clients and then click **OK**.
- 5 Restart your computer so the changes you made take effect.

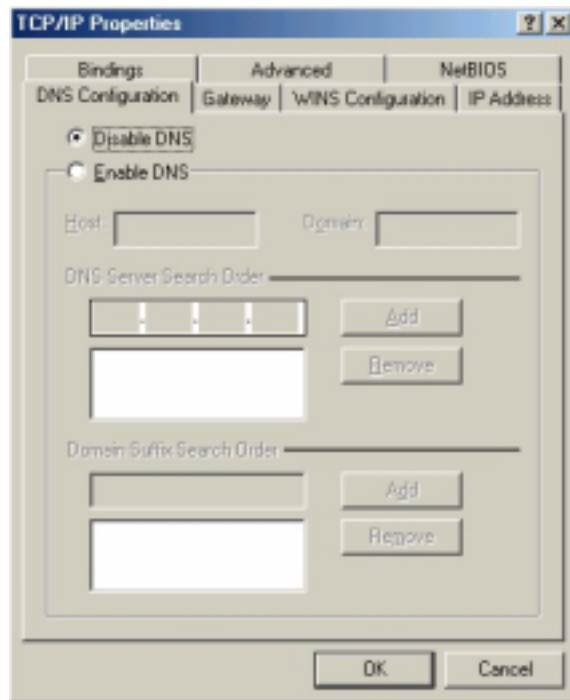
Configuring

- 1 In the **Network** window **Configuration** tab, select your network adapter's TCP/IP entry and click **Properties**
- 2 Click the **IP Address** tab.
 - If your IP address is dynamic, select **Obtain an IP address automatically**.
 - If you have a static IP address, select **Specify an IP address** and type your information into the **IP Address** and **Subnet Mask** fields.

Figure 49 Windows 95/98/Me: TCP/IP Properties: IP Address



- 3 Click the **DNS Configuration** tab.
 - If you do not know your DNS information, select **Disable DNS**.
 - If you know your DNS information, select **Enable DNS** and type the information in the fields below (you may not need to fill them all in).

Figure 50 Windows 95/98/Me: TCP/IP Properties: DNS Configuration

4 Click the **Gateway** tab.

- If you do not know your gateway's IP address, remove previously installed gateways.
- If you have a gateway IP address, type it in the **New gateway field** and click **Add**.

5 Click **OK** to save and close the **TCP/IP Properties** window.

6 Click **OK** to close the **Network** window. Insert the Windows CD if prompted.

7 Restart your computer when prompted.

Verifying Settings

1 Click **Start** and then **Run**.

2 In the **Run** window, type "winipcfg" and then click **OK** to open the **IP Configuration** window.

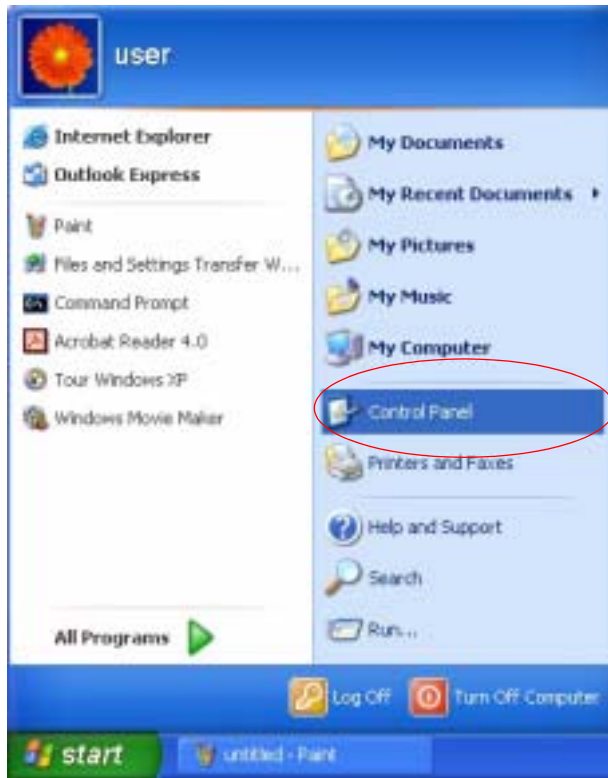
3 Select your network adapter. You should see your computer's IP address, subnet mask and default gateway.

Windows 2000/NT/XP

The following example figures use the default Windows XP GUI theme.

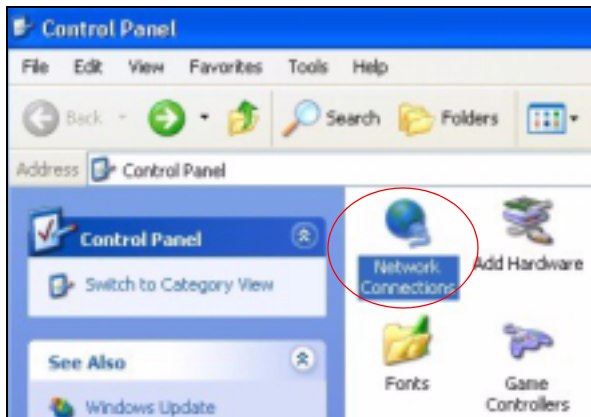
1 Click **start** (**Start** in Windows 2000/NT), **Settings**, **Control Panel**.

Figure 51 Windows XP: Start Menu

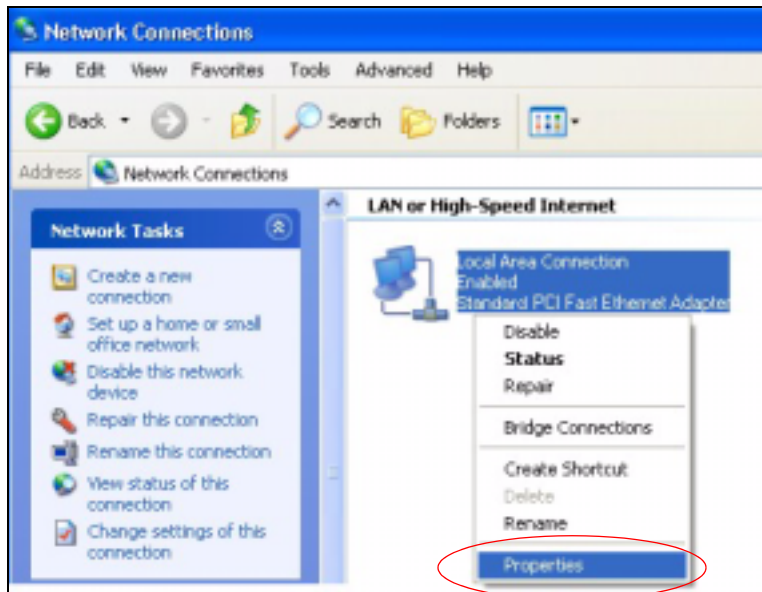


2 In the **Control Panel**, double-click **Network Connections (Network and Dial-up Connections)** in Windows 2000/NT).

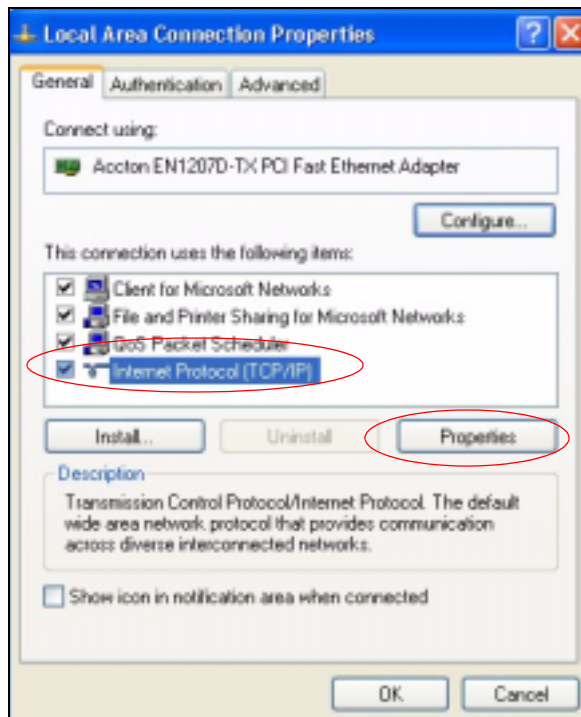
Figure 52 Windows XP: Control Panel



3 Right-click **Local Area Connection** and then click **Properties**.

Figure 53 Windows XP: Control Panel: Network Connections: Properties

- 4** Select **Internet Protocol (TCP/IP)** (under the **General** tab in Win XP) and then click **Properties**.

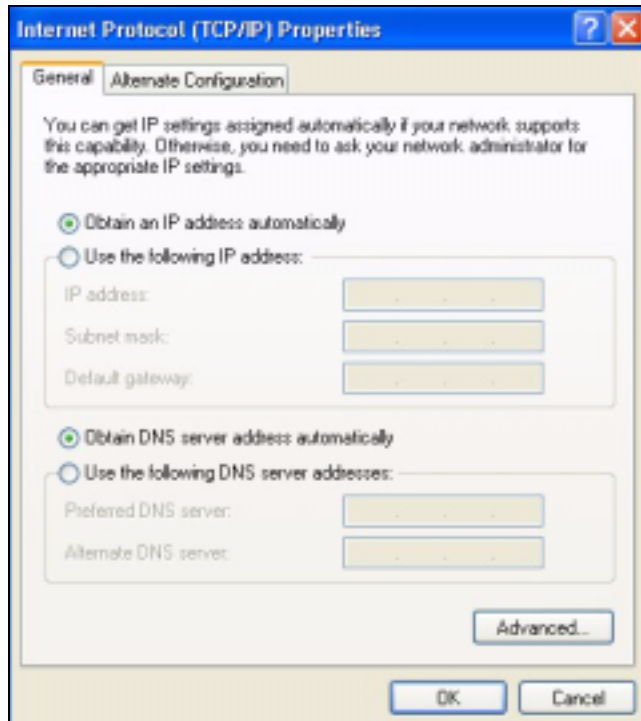
Figure 54 Windows XP: Local Area Connection Properties

- 5** The **Internet Protocol TCP/IP Properties** window opens (the **General** tab in Windows XP).

- If you have a dynamic IP address click **Obtain an IP address automatically**.
- If you have a static IP address click **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields.

- Click **Advanced**.

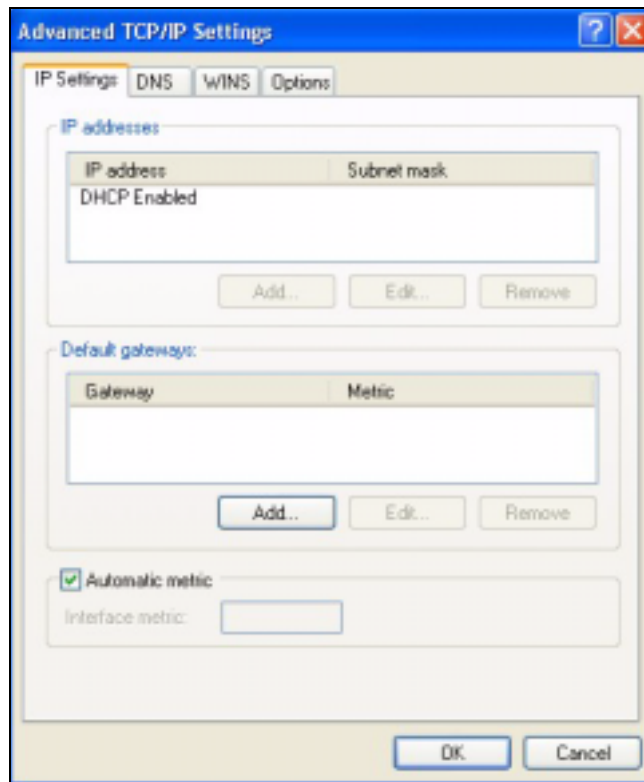
Figure 55 Windows XP: Internet Protocol (TCP/IP) Properties



- 6 If you do not know your gateway's IP address, remove any previously installed gateways in the **IP Settings** tab and click **OK**.

Do one or more of the following if you want to configure additional IP addresses:

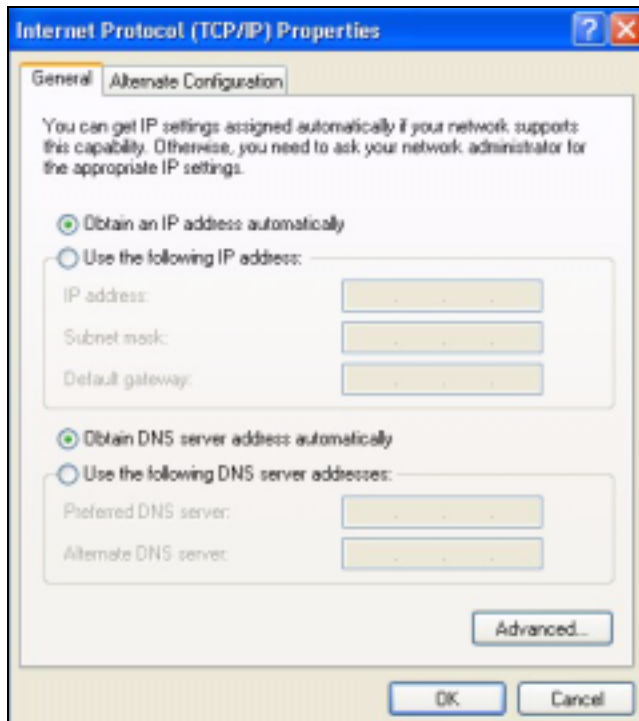
- In the **IP Settings** tab, in IP addresses, click **Add**.
- In **TCP/IP Address**, type an IP address in **IP address** and a subnet mask in **Subnet mask**, and then click **Add**.
- Repeat the above two steps for each IP address you want to add.
- Configure additional default gateways in the **IP Settings** tab by clicking **Add** in **Default gateways**.
- In **TCP/IP Gateway Address**, type the IP address of the default gateway in **Gateway**. To manually configure a default metric (the number of transmission hops), clear the **Automatic metric** check box and type a metric in **Metric**.
- Click **Add**.
- Repeat the previous three steps for each default gateway you want to add.
- Click **OK** when finished.

Figure 56 Windows XP: Advanced TCP/IP Properties

7 In the **Internet Protocol TCP/IP Properties** window (the **General** tab in Windows XP):

- Click **Obtain DNS server address automatically** if you do not know your DNS server IP address(es).
- If you know your DNS server IP address(es), click **Use the following DNS server addresses**, and type them in the **Preferred DNS server** and **Alternate DNS server** fields.

If you have previously configured DNS servers, click **Advanced** and then the **DNS** tab to order them.

Figure 57 Windows XP: Internet Protocol (TCP/IP) Properties

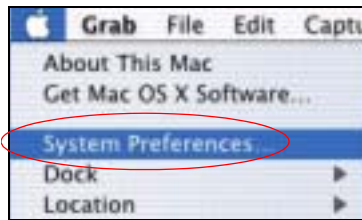
- 8** Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.
- 9** Click **Close (OK in Windows 2000/NT)** to close the **Local Area Connection Properties** window.
- 10** Close the **Network Connections** window (**Network and Dial-up Connections** in Windows 2000/NT).
- 11** Restart your computer (if prompted).

Verifying Settings

- 1** Click **Start, All Programs, Accessories** and then **Command Prompt**.
- 2** In the **Command Prompt** window, type "ipconfig" and then press [ENTER]. You can also open **Network Connections**, right-click a network connection, click **Status** and then click the **Support** tab.

Macintosh OS X

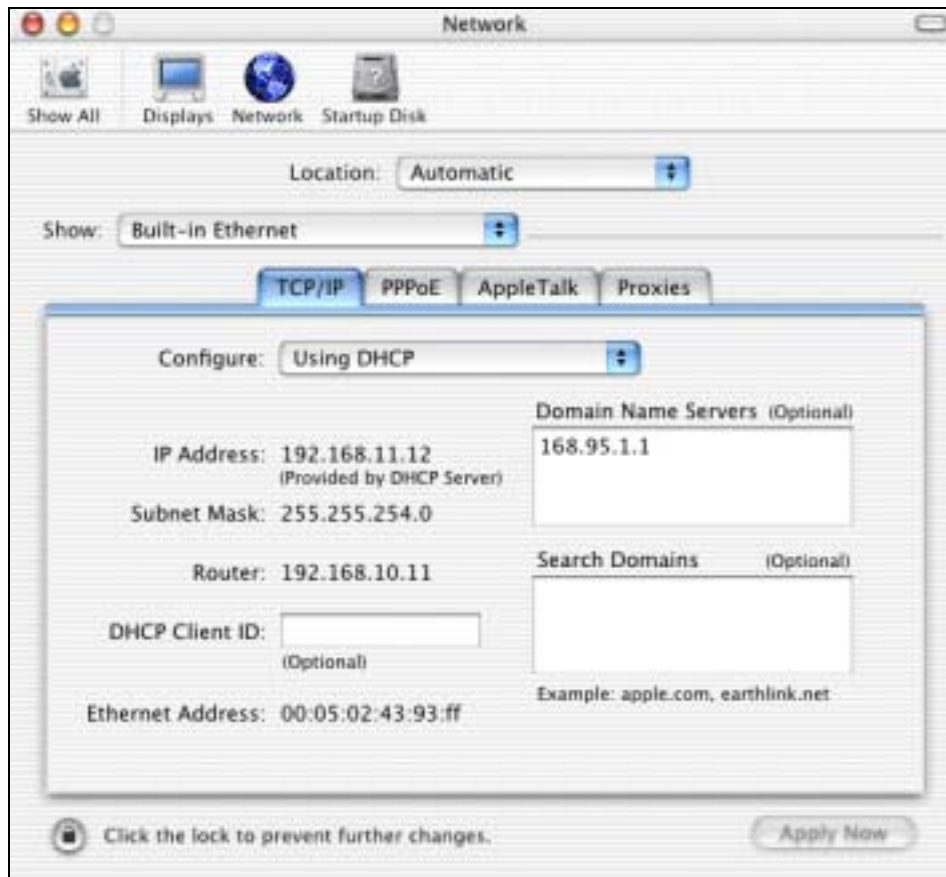
- 1** Click the **Apple** menu, and click **System Preferences** to open the **System Preferences** window.

Figure 58 Macintosh OS X: Apple Menu

2 Click **Network** in the icon bar.

- Select **Automatic** from the **Location** list.
- Select **Built-in Ethernet** from the **Show** list.
- Click the **TCP/IP** tab.

3 For dynamically assigned settings, select **Using DHCP** from the **Configure** list.

Figure 59 Macintosh OS X: Network

4 For statically assigned settings, do the following:

- From the **Configure** box, select **Manually**.
- Type your IP address in the **IP Address** box.
- Type your subnet mask in the **Subnet mask** box.
- Type the IP address of your gateway in the **Router address** box.

5 Click **Apply Now** and close the window.

- 6 Restart your computer (if prompted).

Verifying Settings

Check your TCP/IP properties in the **Network** window.

Linux

This section shows you how to configure your computer's TCP/IP settings in Red Hat Linux 9.0. Procedure, screens and file location may vary depending on your Linux distribution and release version.

Note: Make sure you are logged in as the root administrator.

Using the K Desktop Environment (KDE)

Follow the steps below to configure your computer IP address using the KDE.

- 1 Click the Red Hat button (located on the bottom left corner), select **System Setting** and click **Network**.

Figure 60 Red Hat 9.0: KDE: Network Configuration: Devices



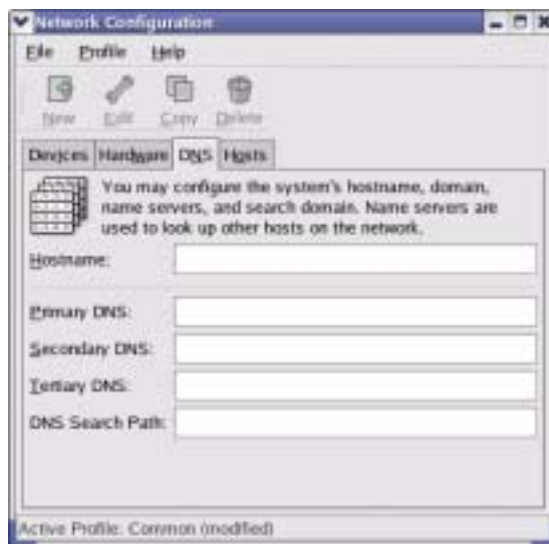
- 2 Double-click on the profile of the network card you wish to configure. The **Ethernet Device General** screen displays as shown.

Figure 61 Red Hat 9.0: KDE: Ethernet Device: General

- If you have a dynamic IP address, click **Automatically obtain IP address settings with** and select **dhcp** from the drop down list.
- If you have a static IP address, click **Statically set IP Addresses** and fill in the **Address**, **Subnet mask**, and **Default Gateway Address** fields.

3 Click **OK** to save the changes and close the **Ethernet Device General** screen.

4 If you know your DNS server IP address(es), click the **DNS** tab in the **Network Configuration** screen. Enter the DNS server information in the fields provided.

Figure 62 Red Hat 9.0: KDE: Network Configuration: DNS

5 Click the **Devices** tab.

6 Click the **Activate** button to apply the changes. The following screen displays. Click **Yes** to save the changes in all screens.

Figure 63 Red Hat 9.0: KDE: Network Configuration: Activate

- 7 After the network card restart process is complete, make sure the **Status** is **Active** in the **Network Configuration** screen.

Using Configuration Files

Follow the steps below to edit the network configuration files and set your computer IP address.

- 1 Assuming that you have only one network card on the computer, locate the `ifconfig-eth0` configuration file (where `eth0` is the name of the Ethernet card). Open the configuration file with any plain text editor.
 - If you have a dynamic IP address, enter `dhcp` in the `BOOTPROTO=` field. The following figure shows an example.

Figure 64 Red Hat 9.0: Dynamic IP Address Setting in `ifconfig-eth0`

```
DEVICE=eth0
ONBOOT=yes
BOOTPROTO=dhcp
USERCTL=no
PEERDNS=yes
TYPE=Ethernet
```

- If you have a static IP address, enter `static` in the `BOOTPROTO=` field. Type `IPADDR=` followed by the IP address (in dotted decimal notation) and type `NETMASK=` followed by the subnet mask. The following example shows an example where the static IP address is 192.168.1.10 and the subnet mask is 255.255.255.0.

Figure 65 Red Hat 9.0: Static IP Address Setting in ifconfig-eth0

```

DEVICE=eth0
ONBOOT=yes
BOOTPROTO=static
IPADDR=192.168.1.10
NETMASK=255.255.255.0
USERCTL=no
PEERDNS=yes
TYPE=Ethernet

```

- 2 If you know your DNS server IP address(es), enter the DNS server information in the `resolv.conf` file in the `/etc` directory. The following figure shows an example where two DNS server IP addresses are specified.

Figure 66 Red Hat 9.0: DNS Settings in resolv.conf

```

nameserver 172.23.5.1
nameserver 172.23.5.2

```

- 3 After you edit and save the configuration files, you must restart the network card. Enter `./network restart` in the `/etc/rc.d/init.d` directory. The following figure shows an example.

Figure 67 Red Hat 9.0: Restart Ethernet Card

```

[root@localhost init.d]# network restart

Shutting down interface eth0:                [OK]
Shutting down loopback interface:           [OK]
Setting network parameters:                 [OK]
Bringing up loopback interface:             [OK]
Bringing up interface eth0:                 [OK]

```

Verifying Settings

Enter `ifconfig` in a terminal screen to check your TCP/IP properties.

Figure 68 Red Hat 9.0: Checking TCP/IP Properties

```

[root@localhost]# ifconfig
eth0      Link encap:Ethernet HWaddr 00:50:BA:72:5B:44
          inet addr:172.23.19.129 Bcast:172.23.19.255 Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:717 errors:0 dropped:0 overruns:0 frame:0
          TX packets:13 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:100
          RX bytes:730412 (713.2 Kb) TX bytes:1570 (1.5 Kb)
          Interrupt:10 Base address:0x1000
[root@localhost]#

```

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