

NSA320

2-Bay Digital Media Server

User's Guide



Default Login Details

Web Address	nsa320
User Name	admin
Password	1234

Firmware Version 4.01
Edition 1, 06/2010

www.zyxel.com

ZyXEL

About This User's Guide

Intended Audience

This manual is intended for people who want to configure the NSA using the Web Configurator.

Tips for Reading User's Guides On-Screen

When reading a ZyXEL User's Guide On-Screen, keep the following in mind:

- If you don't already have the latest version of Adobe Reader, you can download it from <http://www.adobe.com>.
- Use the PDF's bookmarks to quickly navigate to the areas that interest you. Adobe Reader's bookmarks pane opens by default in all ZyXEL User's Guide PDFs.
- If you know the page number or know vaguely which page-range you want to view, you can enter a number in the toolbar in Reader, then press [ENTER] to jump directly to that page.
- Type [CTRL]+[F] to open the Adobe Reader search utility and enter a word or phrase. This can help you quickly pinpoint the information you require. You can also enter text directly into the toolbar in Reader.
- To quickly move around within a page, press the [SPACE] bar. This turns your cursor into a "hand" with which you can grab the page and move it around freely on your screen.
- Embedded hyperlinks are actually cross-references to related text. Click them to jump to the corresponding section of the User's Guide PDF.

Related Documentation

- Quick Start Guide

The Quick Start Guide is designed to help you get your NSA up and running right away. It contains information on setting up your network and configuring for Internet access.

- Web Configurator Online Help

The embedded Web Help contains descriptions of individual screens and supplementary information.

Note: It is recommended you use the web configurator to configure the NSA.

- Support Disc

Refer to the included CD for support documents.

Documentation Feedback

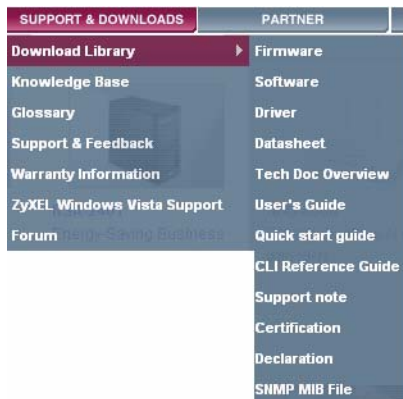
Send your comments, questions or suggestions to: techwriters@zyxel.com.tw

Thank you!

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Need More Help?

More help is available at www.zyxel.com.



- Download Library
Search for the latest product updates and documentation from this link. Read the Tech Doc Overview to find out how to efficiently use the User Guide, Quick Start Guide and Command Line Interface Reference Guide in order to better understand how to use your product.
- Knowledge Base
If you have a specific question about your product, the answer may be here. This is a collection of answers to previously asked questions about ZyXEL products.
- Forum
This contains discussions on ZyXEL products. Learn from others who use ZyXEL products and share your experiences as well.

Customer Support

Should problems arise that cannot be solved by the methods listed above, you should contact your vendor. If you cannot contact your vendor, then contact a ZyXEL office for the region in which you bought the device.

See http://www.zyxel.com/web/contact_us.php for contact information. Please have the following information ready when you contact an office.

- 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.

Document Conventions

Warnings and Notes

These are how warnings and notes are shown in this User's Guide.

Warnings tell you about things that could harm you or your device.

Note: Notes tell you other important information (for example, other things you may need to configure or helpful tips) or recommendations.




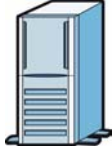






Syntax Conventions

- The NSA may be referred to as the "NSA", the "device" or the "system" in this User's Guide.
- Product labels, screen names, field labels and field choices are all in **bold** font.
- A key stroke is denoted by square brackets and uppercase text, for example, [ENTER] means the "enter" or "return" key on your keyboard.
- "Enter" means for you to type one or more characters and then press the [ENTER] key. "Select" or "choose" means for you to use one of the predefined choices.
- A right angle bracket (>) within a screen name denotes a mouse click. For example, **Maintenance > Log > Log Setting** means you first click **Maintenance** in the navigation panel, then the **Log** sub menu and finally the **Log Setting** tab to get to that screen.
- Units of measurement may denote the "metric" value or the "scientific" value. For example, "k" for kilo may denote "1000" or "1024", "M" for mega may denote "1000000" or "1048576" and so on.
- "e.g.," is a shorthand for "for instance", and "i.e.," means "that is" or "in other words".

Icons Used in Figures

Figures in this User's Guide may use the following generic icons. The NSA icon is not an exact representation of your device.

Graphics in this book may differ slightly from the product due to differences in operating systems, operating system versions, or if you installed updated firmware/software for your device. Every effort has been made to ensure that the information in this manual is accurate.

NSA 	Computer 	Notebook computer 
Server 	Television 	Firewall 
Router 	Switch 	Wireless Access Point 
Internet 		

Safety Warnings

- Do NOT use this product near water, for example, in a wet basement or near a swimming pool.
- Do NOT expose your device to dampness, dust or corrosive liquids.
- Do NOT store things on the device.
- Do NOT install, use, or service this device during a thunderstorm. There is a remote risk of electric shock from lightning.
- Connect ONLY suitable accessories to the device.
- Do NOT open the device or unit. Opening or removing covers can expose you to dangerous high voltage points or other risks. ONLY qualified service personnel should service or disassemble this device. Please contact your vendor for further information.
- ONLY qualified service personnel should service or disassemble this device.
- Make sure to connect the cables to the correct ports.
- Place connecting cables carefully so that no one will step on them or stumble over them.
- Always disconnect all cables from this device before servicing or disassembling.
- Use ONLY an appropriate power adaptor or cord for your device.
- Connect the power adaptor or cord to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe).
- Do NOT allow anything to rest on the power adaptor or cord and do NOT place the product where anyone can walk on the power adaptor or cord.
- Do NOT use the device if the power adaptor or cord is damaged as it might cause electrocution.
- If the power adaptor or cord is damaged, remove it from the power outlet.
- Do NOT attempt to repair the power adaptor or cord. Contact your local vendor to order a new one.
- Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning.
- CAUTION: RISK OF EXPLOSION IF BATTERY (on the motherboard) IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS. Dispose them at the applicable collection point for the recycling of electrical and electronic equipment. For detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the store where you purchased the product.
- Do NOT obstruct the device ventilation slots, as insufficient airflow may harm your device.

Your product is marked with this symbol, which is known as the WEEE mark. WEEE stands for Waste Electronics and Electrical Equipment. It means that used electrical and electronic products should not be mixed with general waste. Used electrical and electronic equipment should be treated separately.



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PART I

User's Guide

Getting to Know Your NSA

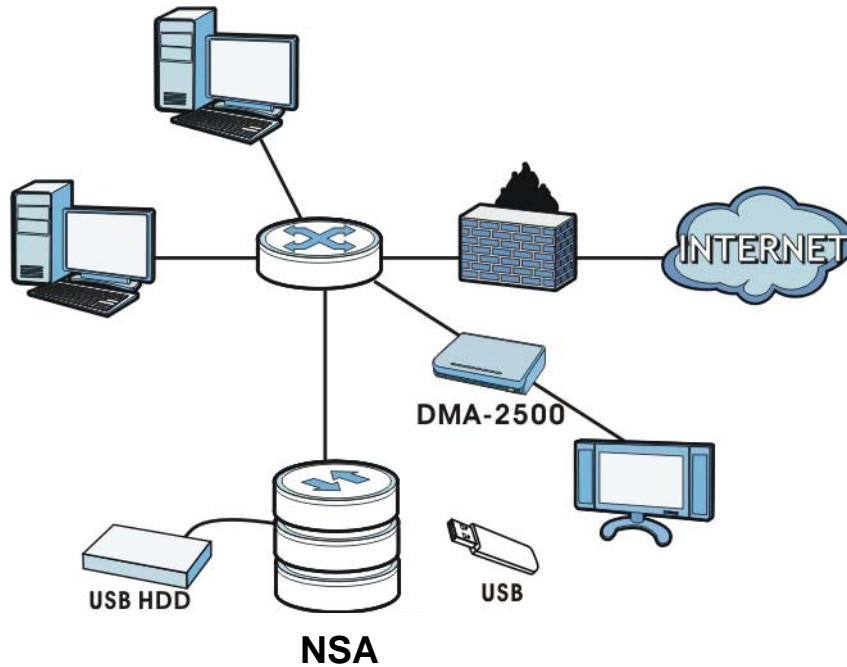
1.1 Overview

This chapter covers the main features and applications of the NSA.

Use the NSA to do the following.

- Share files between computers on your network.
- Back up files from your computers to the NSA.
- Use the **COPY/SYNC** button to copy or synchronize files between the NSA and USB devices like card readers, MP3 players, mass storage devices, and digital cameras without using a computer.
- Have the NSA handle large file downloads.
- Automatically download files from website feeds for convenient viewing.
- Play the NSA's video, music and photo files on your computers using the included media client software.
- Play the NSA's video, music and photo files on hardware-based media clients like the DMA-2500.
- Use the NSA's website to share files with remote users.
- Use iTunes on your computer to play video and music files stored on the NSA.
- Share printers.
- Automatically upload photo and video files to your FTP server, Flickr and YouTube accounts.

Figure 1 Example of the NSA in a Home Network



Above is the NSA in a home network. Users back up and share data on the NSA. The DMA-2500 plays the NSA's media files on the TV. A USB hard drive provides extra storage space and files are copied directly from the USB mass storage device to the NSA.

Place the NSA behind a firewall and/or IDP (Intrusion Detection and Prevention) device to protect it from attacks from the Internet.

Note: See [Chapter 18 on page 373](#) for a more detailed list of NSA features.

Refer to the Quick Start Guide for hardware connections and how to install and remove hard drives from the disk trays.

Note: Turn off and disconnect the NSA before you install or remove the internal hard disk.

1.2 Hard Disks

Your NSA has two internal hard disk bays. Install one or two SATA (Serial Advanced Technology Attachment) hard disks. Note that both SATA hard disks are treated as internal or SATA volumes in the **Storage > Volume** screen ([Section 7.4 on page 165](#)). Any hard disk connected to the USB port(s) is considered an external or USB volume.

1.3 LEDs

The NSA LEDs (lights) tell you important information.

Figure 2 NSA Front Panel



This table describes the NSA's LEDs.

Table 1 LEDs

LED	COLOR	STATUS	DESCRIPTION
POWER	Blue	On	The NSA is turned on and receiving power.
		Off	The NSA is turned off.
SYSTEM	Green	On	The NSA has fully started and is operating normally.
		Blinking	The NSA is starting up.
	Amber	Blinking	The NSA is upgrading the firmware. Note: Do not turn off the NSA while it is upgrading the firmware or you may render it unusable.

Table 1 LEDs (continued)

LED	COLOR	STATUS	DESCRIPTION
HDD1/ HDD2	Green	On	The hard disk drive is connected properly to the NSA.
		Blinking	The NSA is saving data to the hard disk drive.
	Red	On	The NSA detected an error on the hard disk drive (like a bad sector for example). The NSA automatically tries to recover a bad sector, but the LED stays red until the NSA restarts.
		Off	The NSA cannot detect a hard disk in the disk bay.
USB	Green	On	The USB device is connected properly to the NSA.
		Blinking	The NSA is saving data to the USB device.
	Red	On	The USB device has failed and the NSA can no longer detect it.
		Off	No USB device connected to the USB port.
LAN	Green	On	The NSA has a successful 10/100 Mbps Ethernet connection.
		Blinking	The 100M LAN is sending or receiving packets.
		Off	The NSA does not have a 10/100 Mbps Ethernet connection.
	Amber	On	The NSA has a successful 1000 Mbps Ethernet connection.
		Blinking	The 1000 M LAN is sending or receiving packets.
		Off	The NSA does not have a 1000 Mbps Ethernet connection.
COPY/ SYNC	Green	On	A USB device is connected to the NSA.
		Blinking	The NSA is copying or synchronizing files to or from the USB device.
	Red	On	Copying or synchronizing files to or from the USB device failed.
		Off	No USB device is connected.

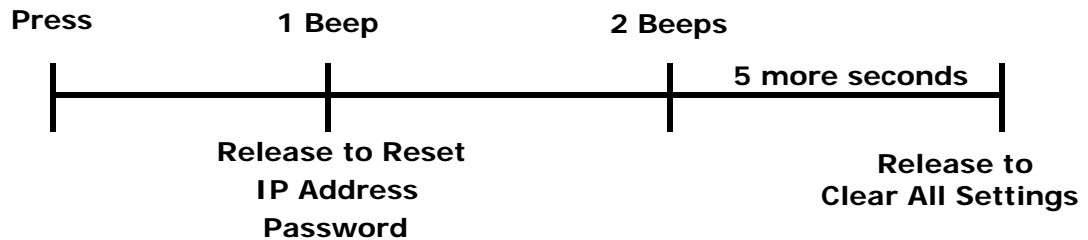
1.3.1 COPY/SYNC Button

Use the **COPY/SYNC** button on the front panel to copy or synchronize files between a connected USB device and the NSA. See [Section 9.10 on page 216](#) for more details on how to configure the copy/sync settings.

1.3.2 RESET Button

Use the **RESET** button on the rear panel to restore the NSA's default settings.

Figure 3 The RESET Button



- Press the **RESET** button until you hear one beep (after about two seconds), then release it. You will hear one more beep after you release the button.
This resets the NSA's IP address and password to the default values.
- Press the **RESET** button until you hear two beeps. After the second beep, continue pressing the button for five more seconds, then release it. You will hear three quick beeps after you release the button.

This resets the NSA to the factory default configuration. All settings you have configured on the NSA, including IP address, password, user accounts, groups, and so on will be reset to the factory defaults.

The reset process does NOT affect the volume settings, nor data stored on the NSA.

You should periodically back up your configuration file to your computer (see [Section 15.5 on page 332](#) for details about managing the NSA's configuration file). You could then restore your configuration in the event that you or someone else reset the NSA to the factory defaults.

Note: You should keep the NSA in a secure location in order to prevent unauthorized reset of the device.

You may need to close and re-open the NAS Starter Utility to discover the NSA. This is because the NSA automatically re-acquires IP address information, so its IP address may change. If no IP address information is assigned, the NSA uses Auto-IP to assign itself an IP address and subnet mask. For example, you could connect the NSA directly to your computer. If the computer is also set to get an IP address automatically, the computer and the NSA will choose addresses for themselves and be able to communicate.

NAS Starter Utility

2.1 Overview

This chapter describes the NAS Starter Utility. Use the NAS Starter Utility to find, set up, and manage the NSA as well as copy files to it and access the files on it.

Make sure you have a backup of any existing data in the hard disk before installing it in the NSA. Using the initialization wizard formats the hard disk and deletes all data in the process.

There is a NAS Starter Utility available for Windows XP, Windows Vista, or Windows 7. Click **Help** to open a web help page about the NAS Starter Utility screens. NAS Starter Utility screens are shown here as they display with the Windows platform.

Note: Refer to the Quick Start Guide for your NSA's hardware connections and the steps for installing the NAS Starter Utility.

2.2 Starting the NAS Starter Utility

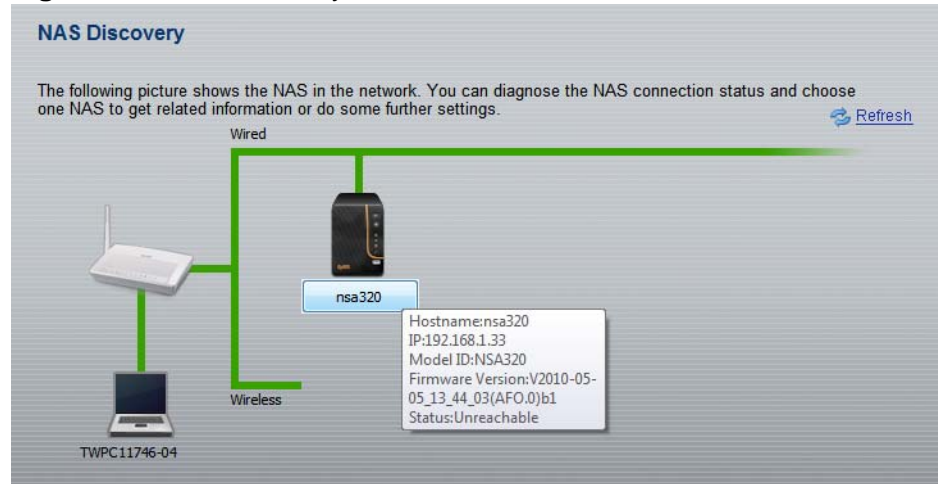
- The NAS Starter Utility broadcasts a request packet when you first run it. Each NSA has an NAS Starter Utility Agent that always listens and responds to requests from the NAS Starter Utility. The NAS Starter Utility receives the response packet that contains information, such as host name, IP, and so on.
- If you plan to use more than one NSA in your network, configure them with unique server names. This enables you to identify each NSA in the NAS Starter Utility screens.

2.3 NAS Discovery Screen

Use this screen to view the NSAs in your network. The NSA's **Server Name** (default is 'nsa320'). See [Section 2.9 on page 45](#) for how to change it to a more recognizable one in your network.

Start the NAS Starter Utility (click the icon in your Desktop or in **Start > Programs > ZyXEL > NAS Starter Utility**). The first time you open the NAS Starter Utility the discovery screen appears as follows.

Figure 4 NAS Discovery



The following table describes the labels in this screen.

Table 2 NAS Discovery

LABEL	DESCRIPTION
Refresh	Click this to refresh the screen. The NAS Starter Utility does not automatically refresh.
Hostname	<p>This is the server name you configured for the NSA. If you have more than one NSA in your network, it is recommended that you give each one a unique name for identification purposes.</p> <p>If you have several NSAs connected to your computer/network, hover your mouse over the host name to view the details of each device. A box pops up containing details about the NSA.</p> <p>Hostname shows the NSA's configured server name.</p> <p>IP shows the NSA's current IP address.</p> <p>Model ID shows the NSA's model name.</p> <p>Firmware Version shows the version of firmware the NSA is currently using.</p> <p>Status shows whether the NSA is Online, Unreachable, Configuring, or Config Failed.</p>

2.4 Main NAS Starter Utility Screen

The main NAS Starter Utility screen displays after you select a NSA in the **NSA Discovery** screen.

Figure 5 NAS Starter Utility Main Screen



The following table describes the labels in this screen.

Table 3 NAS Starter Utility Main Screen

LABEL	DESCRIPTION
Discovery	Click this to use the NSA Discovery screen (Section 2.3 on page 29) to find and select the NSA on your network to which you want to connect.
bar	The bar shows the NSA's in-use and remaining storage capacity.
Name	This is the server name you configured for the NSA. If you have more than one NSA in your network, it is recommended that you give each one a unique name for identification purposes.
Firmware	This shows the version of firmware the NSA is currently using.
IP address	This is the current IP address of the NSA.
Status	This shows whether the NSA is Online , Unreachable , Configuring , or Config Failed .
NAS Discovery	Click this to use the NSA Discovery screen (Section 2.3 on page 29) to find and select the NSA on your network to which you want to connect.
Import files or folders with zPilot	Click this to launch zPilot to drag and drop files onto the NSA.
Add a network drive to My Computer	Click this to add the NSA as a network drive in your computer's Windows Explorer.
Manage the device	Click this to log into the advanced administration screens. See Section 3.5 on page 66 for details on the administration screens.

Table 3 NAS Starter Utility Main Screen

LABEL	DESCRIPTION
Play Media Files from Home Screen	Click this to enjoy your media files through your web browser. See Section 3.4 on page 52 for details on the Home screen.
Show the directory of the NSA	Click this to open the NSA's file directory in Windows Explorer. See Section 2.5.3 on page 42 for details.
Run the Initialization Wizard	Click this to set up the NSA for the first time. See Section 2.5 on page 32 for details.
Configure network setting	Click this to change the NSA network settings such as the NSA's name, IP address, subnet mask, default gateway, DNS, or PPPoE. See Section 2.9 on page 45 for details.

2.5 Initialization Wizard

Use these screens to set up the NSA for the first time

Click **Run the Initialization Wizard** in the main utility screen to display the following screen. You must log in using an admin account. The default administrator username is 'admin' and the default password is '1234' and click **Next**.


Figure 6 Initialization Wizard Welcome

Welcome

If the NAS is still using the default password, you can find it in the Quick Start Guide.

Username:

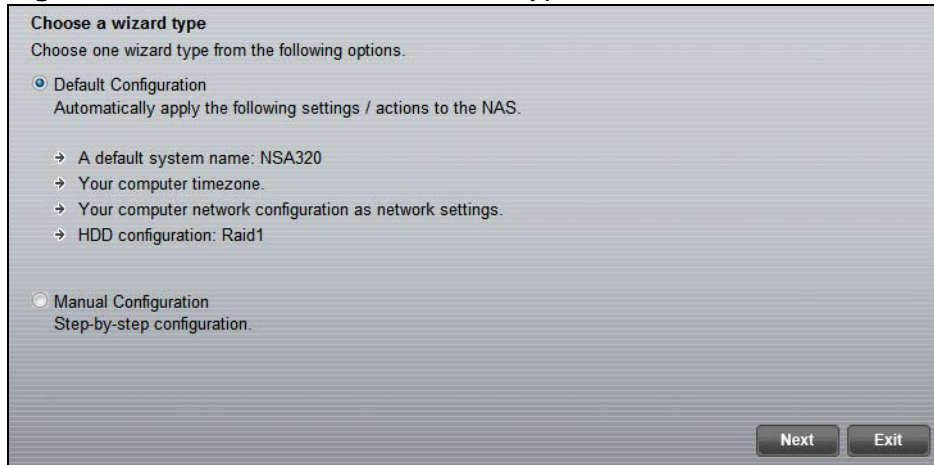
Password:

 All data on disk(s) will be erased.

Next Exit

Choose **Default Configuration** (recommended) or manual configuration. Use the manual option if you need to name the NSA to configure specific network settings. Click **Next**.

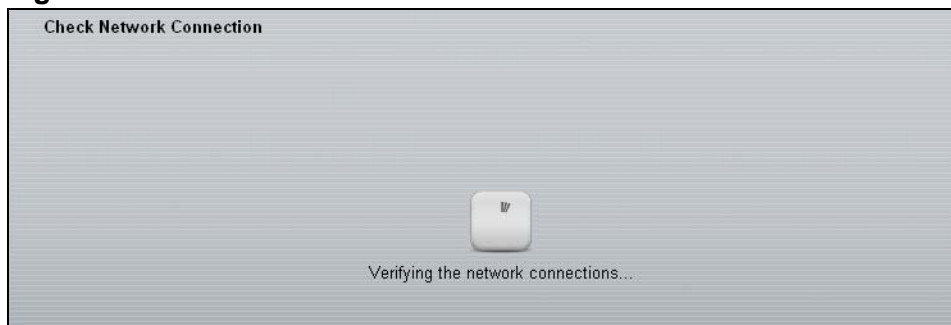
Figure 7 Initialization Wizard: Wizard Type



2.5.1 Default Configuration

- 1 The NAS Starter Utility checks the Internet connection.

Figure 8 Check Network Connection



- 2 Type a new administrator password (and retype it to confirm). If you do not want to change the administrator password, you can leave the fields blank and just click **Next**.

Figure 9 Change Admin Password

The screenshot shows a window titled "Change Admin Password". Below the title, it says "As a security precaution, it is highly recommended that you change the admin password." There are two input fields: "New Password:" and "Verify New Password:". Below these fields is a warning icon (a yellow triangle with an exclamation mark) and the text "Warning". The warning text reads: "For better security, it is recommended that the password contain 8 or more characters consisting of a mix of letters, numbers, and symbols." At the bottom right of the window, there are three buttons: "Back", "Next", and "Exit".

- 3 Specify usernames and passwords for the individuals you want to be able to access the NSA.

Figure 10 Create User Accounts

The screenshot shows a window titled "Create User Accounts - optional". It contains five rows, each representing a user account. Each row starts with a person icon, followed by a dropdown menu currently set to "Normal User". To the right of the dropdown are two input fields labeled "Username:" and "Password:". At the bottom right of the window, there are four buttons: "Skip", "Back", "Next", and "Exit".

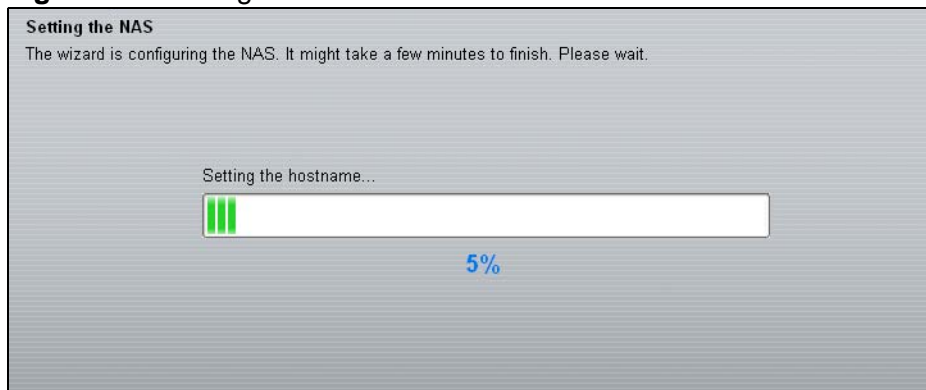
- 4 Check your settings. If they are OK, click **Next**. Otherwise click **Back**. If you want to change anything other than the user accounts, keep clicking **Back** until you can change the wizard type to manual.

Figure 11 Confirm Settings



- 5 Wait while the NAS Starter Utility configures the NSA.

Figure 12 Setting the NAS



After the NAS Starter Utility finishes configuring the NSA, you can click **Show the directory of the NAS** to see the NSA's shares (see [Section 2.5.3 on page 42](#)) or

click **Finish** to return to the main NAS Starter Utility screen (see [Section 2.4 on page 31](#)).

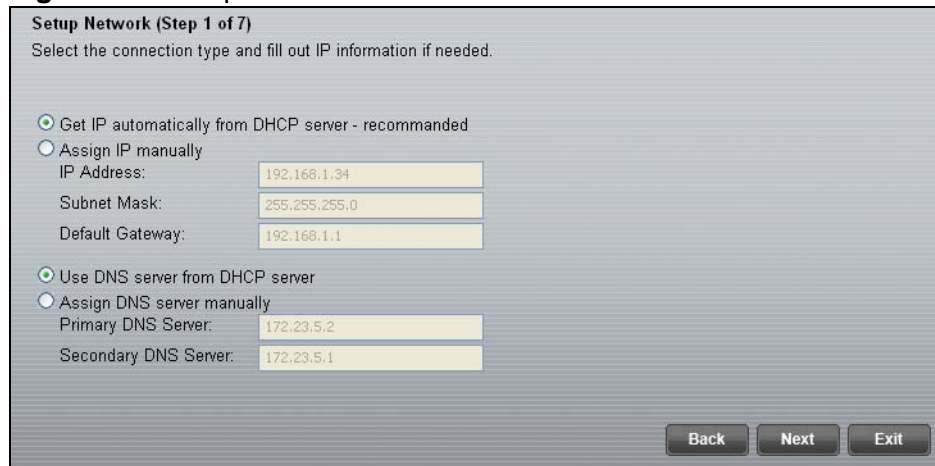
Figure 13 Setting the NAS



2.5.2 Manual Configuration

- 1 Set up the NSA's basic network configuration first.

Figure 14 Setup Network



The following table describes the labels in this screen.

Table 4 NAS Starter Utility > Config

LABEL	DESCRIPTION
Get IP automatically from DHCP server	Select this if the NSA is automatically assigned an IP address from the ISP or a DHCP server in your network.
Assign IP Manually	Select this if you want to assign the NSA a fixed IP address, subnet mask and default gateway. Note: Do not configure an IP address that is already in use in your network. This results to a network IP address conflict and makes the NSA inaccessible.
Use DNS server from DHCP server	Domain Name System (DNS) is for mapping a domain name to its corresponding IP address and vice versa. Select this if the NSA is automatically given DNS information from the ISP or a DHCP server in your network.
Assign DNS server manually	If you were given specific IP address(es) of the DNS server(s), select this and enter the primary and secondary DNS in the corresponding fields.

- 2 If your Internet connection requires you to enter a user name and password to connect to the Internet, enter them here and click **Next**. If you do not need to enter a user name and password to connect to the Internet, click **Skip**.

Figure 15 PPPoE

Setup Network (Step 1 of 7)
Complete the PPPoE section only if you must use a username and password to connect to the Internet.

Username:

Password:

Verify Password:

Skip Back Next Exit

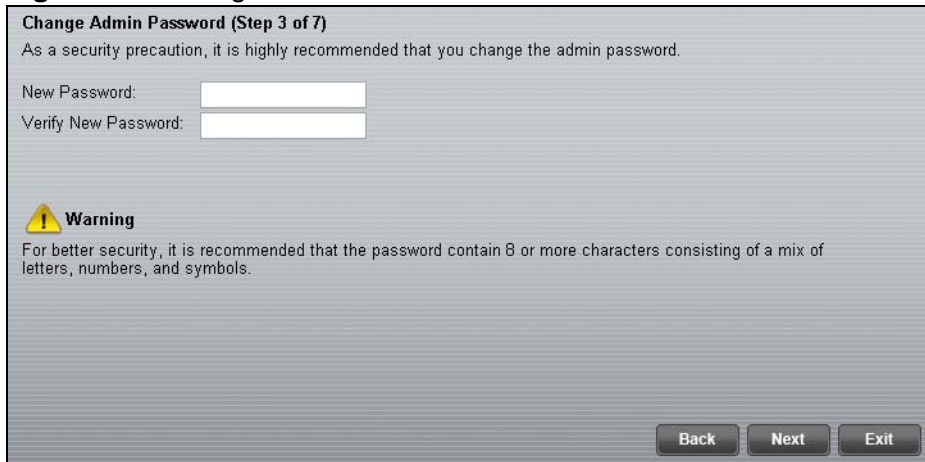
- 3 The NAS Starter Utility checks the Internet connection.

Figure 16 Check Network Connection



- 4 Type a new administrator password (and retype it to confirm) and click **Next**. If you do not want to change the administrator password, you can leave the fields blank and just click **Next**.

Figure 17 Change Admin Password



- 5 Specify a name to uniquely identify the NSA on your network. Choose the time zone of your location. This sets the time difference between your time zone and Greenwich Mean Time (GMT).

Figure 18 Create User Accounts

Enter general information (Step 4 of 7)
Give the NAS a name and select a timezone.

NAS Name:

Timezone:

Back Next Exit

- 6 Select how to configure the hard disks.

Figure 19 Create User Accounts

Choose HDD Configuration (Step 5 of 7)
Each type of HDD configurations offers its advantages of data loss prevention, capacity, or speed. Please select a type according to your requirement.

HDD Configuration:

465.76 GB (Slot1) + 0.00 GB (Slot2) = 465.76 GB (Total Capacity)

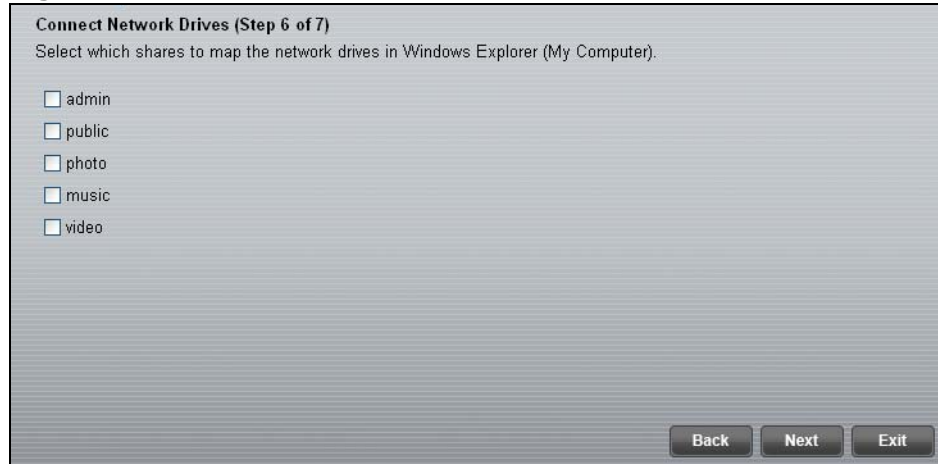
Back Next Exit

With only one hard disk installed, just click **Next**. If you have two hard disks installed choose one of the following:

- RAID 1: Use this to mirror all data on one disk to the other disk to protect against data loss.
- Individual Disks: Use this if you want maximum storage capacity and/or you have other means of protecting your data. This creates two JBOD volumes (with one disk in each), a failure of one disk (volume) should not affect the other volume (disk).
- JBOD: Use this if you want maximum storage capacity and/or you have other means of protecting your data. This combines the two physical disks into a single virtual one, so they appear as a single large disk.

- RAID 0: Use this if you want maximum speed for your disks, and/or you have other means of protecting your data. RAID 0 has the fastest read and write performance but if one disk fails you lose all your data from both disks.
- 7 This screen lists the shares the NAS Starter Utility creates on the NSA by default. Select the ones you want to use as network drives in Windows Explorer.

Figure 20 Connect Network Drives



- 8 Specify usernames and passwords for the individuals you want to be able to access the NSA and click **Next**.

Figure 21 Create User Accounts



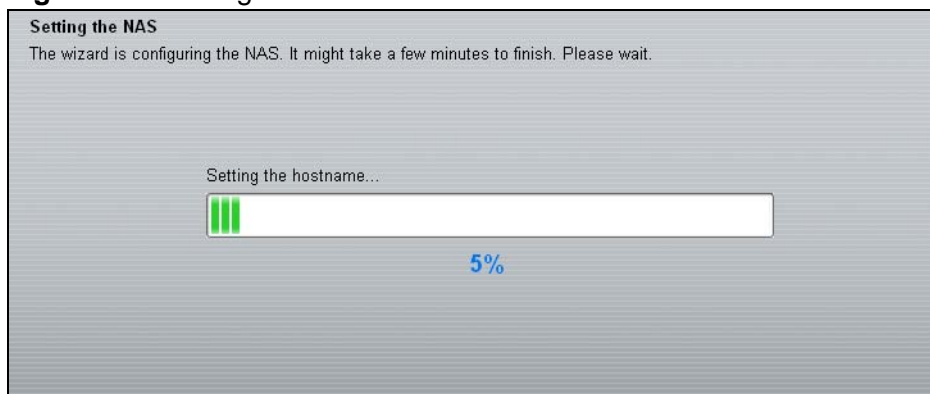
- 9 If the settings are OK, click **Next**. Otherwise click **Back**. If you want to change anything other than the user accounts, keep clicking **Back** until you can change the wizard type to manual.

Figure 22 Confirm Settings



- 10 Wait while the NAS Starter Utility configures the NSA.

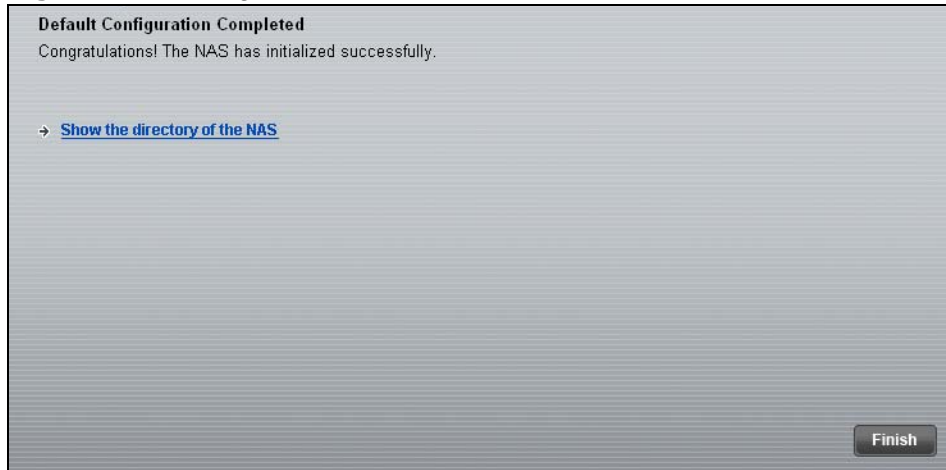
Figure 23 Setting the NAS



After the NAS Starter Utility finishes configuring the NSA, you can click **Show the directory of the NAS** to see the NSA's shares (see [Section 2.5.3 on page 42](#)) or

click **Finish** to return to the main NAS Starter Utility screen (see [Section 2.4 on page 31](#)).

Figure 24 Setting the NAS



2.5.3 Directory of the NAS

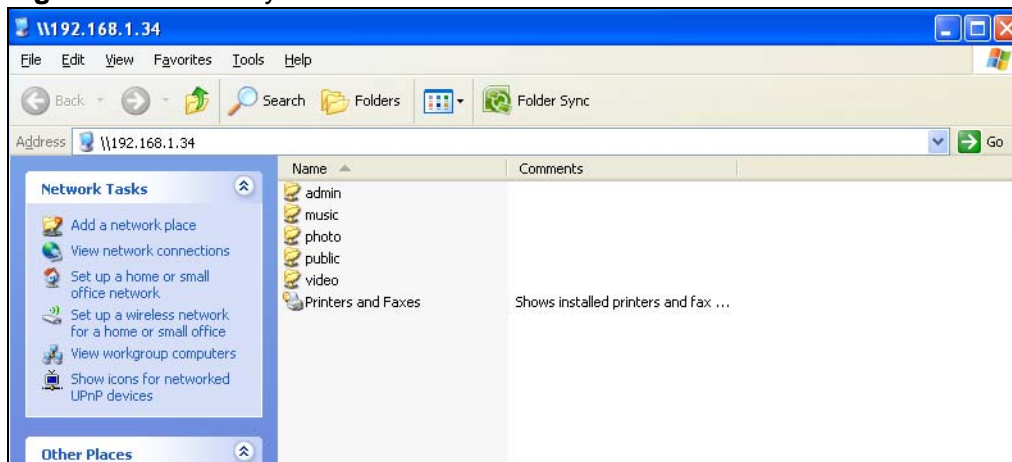
Enter the administrator user name and password and click **Login**.

Figure 25 Login



The utility opens the NSA's directory in Windows Explorer.

Figure 26 Directory



2.6 Import Files or Folders with zPilot

In the main NAS Starter Utility screen click **Import files or folders with zPilot** to be able to drag and drop files from your computer to the NSA.

Enter the administrator user name and password and click **Login**.

Figure 27 Login



The zPilot icon displays.

Figure 28 zPilot



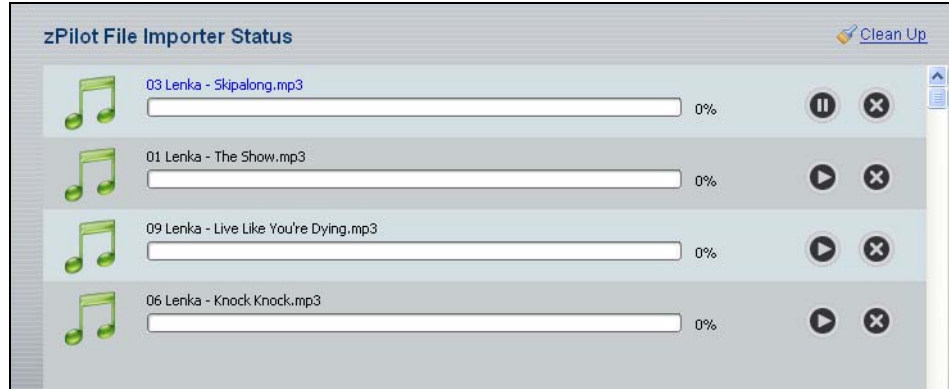
Drag files onto the zPilot icon to move them to the NSA. zPilot automatically sorts music, photo, and video files into the **Music**, **Photo**, and **Video** folders. zPilot can automatically sort the types of media files listed in [Table 122 on page 380](#) (except for the subtitles). Other types of files go to the **Public** folder. For folders of files you are prompted to choose the target destination. The zPilot icon shows the transfer rate.

Figure 29 zPilot Showing Transfer Rate



Double-click the zPilot icon to display the NAS Starter Utility screen with status details about the file transfers. Click the “x” button next to a file entry to stop transferring the file. Click **Clean Up** to clear completed transfers from the list.

Figure 30 zPilot Showing Transfer Rate

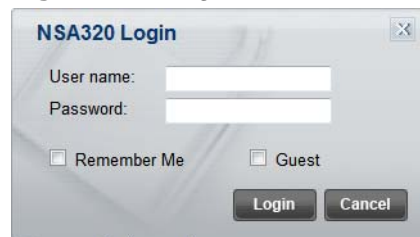


2.7 Add a Network Drive to My Computer

In the main NAS Starter Utility screen click **Add a network drive to My Computer** to add the NSA as a network drive in your computer's Windows Explorer.

Enter your user name and password and click **Login** to be able to add the NSA's shares to which you have access as network drives. Otherwise select **Guest** and click **Login** to be able to add the NSA's public shares as network drives.

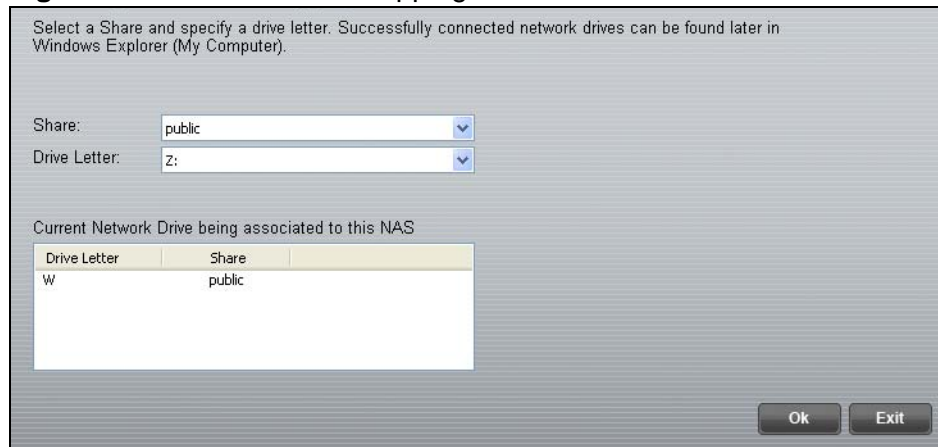
Figure 31 Login



Select a share on the NSA and the drive letter on your computer to which you want to map it. The shares that each user can select to map depends on the user's permissions. For example, if share1 is private to user1, then only user1 is allowed to map share1. The table displays the NSA shares that are already mapped to drive letters on your computer. After you click **OK** you can see the new drive in

Windows Explorer (My Computer) where you can access and use it like your computer's other drives.

Figure 32 Network Drive Mapping



2.8 Manage the Device

In the main NAS Starter Utility screen click **Manage the Device** to log into the NSA's administration screens where you can manage the NSA.

Enter the administrator user name and password and click **Login**.

Figure 33 Login



See [Section 3.5 on page 66](#) for more on the administration screens.

2.9 Configure Network Setting

Use these screens to change the NSA network settings such as the NSA's name, IP address, subnet mask, default gateway, DNS, or PPPoE.

Click **Configure network setting** in the main utility screen to display the following screen.

Figure 34 NAS Starter Utility > Configure network setting

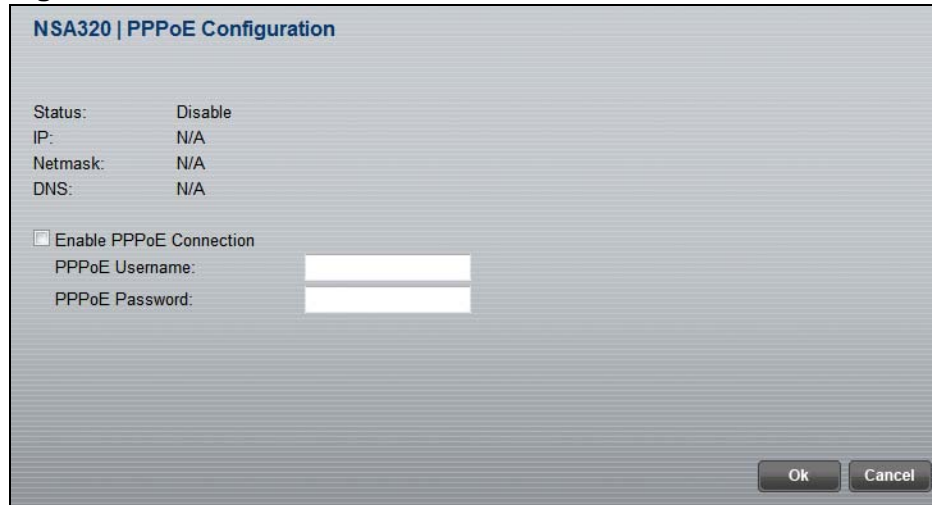
The following table describes the labels in this screen.

Table 5 NAS Starter Utility > Config

LABEL	DESCRIPTION
NAS Name	Specify a name to uniquely identify the NSA on your network. 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 case sensitive.
Get IP automatically from DHCP server	Select this if the NSA is automatically assigned an IP address from the ISP or a DHCP server in your network.
Assign IP Manually	Select this if you want to assign the NSA a fixed IP address, subnet mask and default gateway. Note: Do not configure an IP address that is already in use in your network. This results to a network IP address conflict and makes the NSA inaccessible.
Use DNS server from DHCP server	Domain Name System (DNS) is for mapping a domain name to its corresponding IP address and vice versa. Select this if the NSA is automatically given DNS information from the ISP or a DHCP server in your network.
Assign DNS server manually	If you were given specific IP address(es) of the DNS server(s), select this and enter the primary and secondary DNS in the corresponding fields.
PPPoE	Click this if your Internet connection requires you to enter a user name and password to connect to the Internet.

If your Internet connection requires you to enter a user name and password to connect to the Internet, select **Enable PPPoE Connection** and enter your user name and password.

Figure 35 PPPoE



The image shows a configuration window titled "NSA320 | PPPoE Configuration". It contains the following fields and controls:

- Status: Disable
- IP: N/A
- Netmask: N/A
- DNS: N/A
- Enable PPPoE Connection
- PPPoE Username: [text input field]
- PPPoE Password: [password input field]
- Buttons: Ok, Cancel

Web Configurator Basics

3.1 Overview

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

The web configurator is an HTML-based management interface that allows easy NSA setup and management using an Internet browser.

Use Internet Explorer 6.0 or Mozilla Firefox 2.00, 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.
- JavaScript (enabled by default).

3.2 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).

3.2.1 Access the NSA Via NAS Starter Utility

If you don't know the IP address of the NSA, then use the NAS Starter Utility's **Play Media Files from Home Screen** link to find it. Refer to the Quick Start

Guide for how to install and run the NAS Starter Utility. See [Chapter 2 on page 29](#) for more information on the NAS Starter Utility.

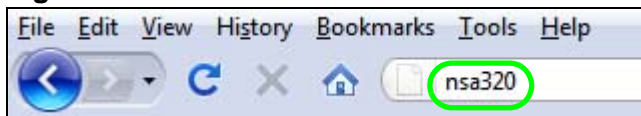
Figure 36 NAS Starter Utility Main Screen



3.2.2 Web Browser Access

Configure the server name of your NSA using the **Network Configuration** screen ([Section 2.9 on page 45](#)) of the NAS Starter Utility. Open your browser and type in the server name of the NSA ("nsa320" by default).

Figure 37 NSA URL

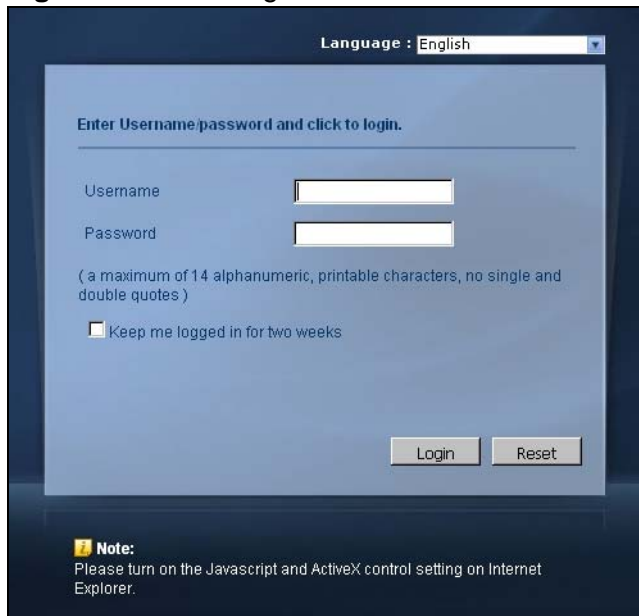


3.3 Login

The default username and password are 'admin' and '1234' respectively. Enter your username and password. If you use the option to stay logged in for two weeks (assuming you do not log out), make sure you keep your computer secure.

Then click **Login**. See [Chapter 12 on page 301](#) for how to create other user accounts.

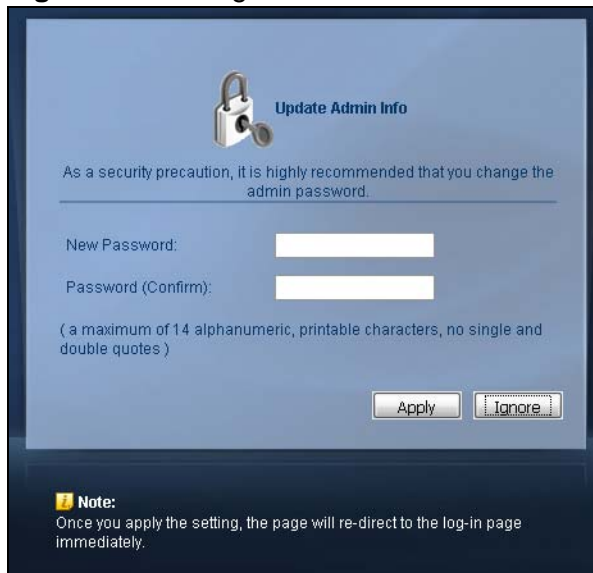
Figure 38 NSA Login Screen



The image shows the NSA Login Screen. At the top right, there is a language dropdown menu set to "English". Below this, the instruction "Enter Username/password and click to login." is displayed. There are two input fields: "Username" and "Password". Below the password field, a note states: "(a maximum of 14 alphanumeric, printable characters, no single and double quotes)". There is a checkbox labeled "Keep me logged in for two weeks" which is currently unchecked. At the bottom right, there are two buttons: "Login" and "Reset". At the bottom left, there is a "Note" icon followed by the text: "Please turn on the Javascript and ActiveX control setting on Internet Explorer."

If you have not done so yet, 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 **Ignore**.

Figure 39 Change Password Screen



The image shows the Change Password Screen. At the top center, there is a padlock icon and the text "Update Admin Info". Below this, a message states: "As a security precaution, it is highly recommended that you change the admin password." There are two input fields: "New Password:" and "Password (Confirm):". Below the second field, a note states: "(a maximum of 14 alphanumeric, printable characters, no single and double quotes)". At the bottom right, there are two buttons: "Apply" and "Ignore". At the bottom left, there is a "Note" icon followed by the text: "Once you apply the setting, the page will re-direct to the log-in page immediately."

3.4 Home Screens

All users (including the administrator) first see the **Home** screen after logging in.

Figure 40 Home



Note: If you did not select the option to stay logged in for two weeks when you logged in, 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.

The main **Home** screen displays icons for the various features you can access.

Table 6 Main Home Screen Icons

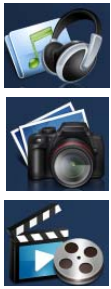




ICON	DESCRIPTION
	Use Music , Photo , and Video to play and organize your music, picture, and video files.
	Use Favorite to create and edit playlists.
	Use File Browser to see your files in a tree-folder structure.

Table 6 Main Home Screen Icons (continued)

ICON	DESCRIPTION
	Administrators can use Application Zone to install, access, and manage the NSA's applications.
	Use System to edit general system settings or log into the administrator advanced configuration screens.

Note: Your browser may need Windows Media Player and VLC plugins installed to play music and video files. To get the VLC plugins, you have to download and install VLC (use the .exe file). To install a VLC plugin for FireFox, when you install VLC, you have to select the Mozilla plugin option. To display your photos as a 3-D wall for quick browsing, install the Colliris plugin.

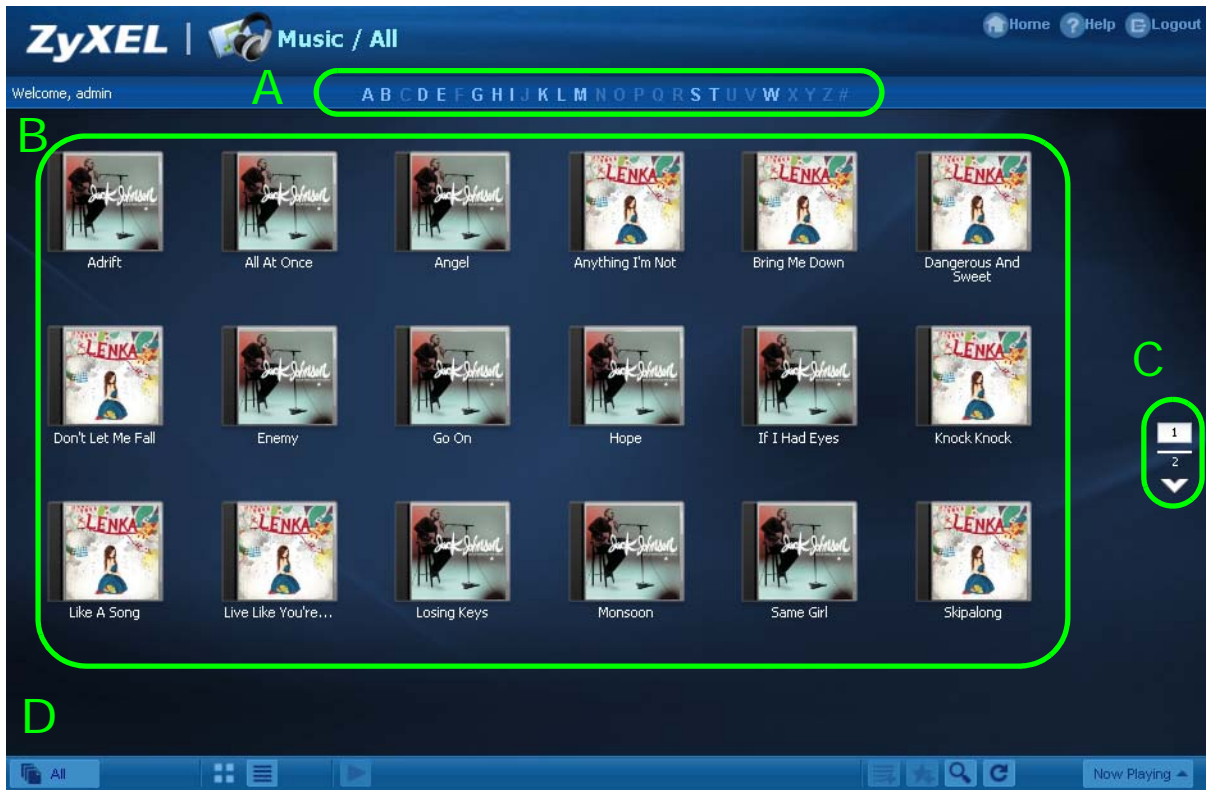
The icons at the top-right of the screen are visible from most screens. Use them to navigate between the screens and menus. The following table describes the icons.

Table 7 Global Home Labels and Icons

LABEL/ICON	DESCRIPTION
Home	Click this to return to the Home screen.
Help	Click this to open a web help page specific to the screen you are currently configuring.
Logout	Click this at any time to exit the web configurator.

Here are some **Home** screen descriptions. A music screen is shown here as an example. Other screens work in a similar way.

Figure 41 Music Screen



This table describes common labels in the **Home** media screens. Not every item displays in every screen.

Table 8 Home Media Screens

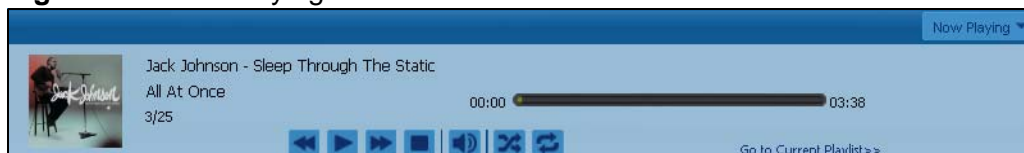
LABEL	DESCRIPTION
A	Click a letter to go to the first item starting with that letter.
B	View files. Double-click an item to play it.
C	Shows which page is displaying and the total number of pages of entries. Click an arrow or type a number to go to another page of entries.

Table 8 Home Media Screens

LABEL	DESCRIPTION
D	Select the sorting criteria: Artist - Sort music by artist. All - All of the menu's files display here. Genre - Sort music by category. Folder - List the folders containing music files. Album - List the identified music albums. Current Playlist - Show the playing and queued songs. The NSA categorizes files into genres and albums according to the information stored in your files. Files may not appear in the proper folders if they have missing, incorrect or incomplete information.
Thumbnail	Click this to view the files as thumbnails.
List	Click this to view the files as a list.
Play	Click this to play the currently selected file. You can also double-click a file to play it.
Delete	Select an item and click Delete to remove it.
Rename	Select an item and click Rename to change its name. Note: When you change a file name, make sure you keep the file extension unchanged.
Add to Current Playlist	Click this to add the selected music file to the currently playing playlist.
Add to Playlist	Click this to add the selected music file to a playlist.
Search	Click this to look for a file or folder by name.
Refresh	Click this to update the display in the screen.
Now Playing	This link is available when a song is playing. Click it to see details about the song that is currently playing.

3.4.1 Now Playing (Music)

A **Now Playing** link displays when a song is playing. Click it to display a panel like the following. This screen displays the name of the current song and its play progress and lets you control the playback.

Figure 42 Now Playing

3.4.2 Exif and Google Maps (Photos)

Click a photo's **EXIF** button to display or hide the photo's Exchangeable image file format (Exif) data.

Figure 43 Exif Information



If a photo's Exif data includes GPS location data, click the latitude or longitude link to display the location in Google Maps. Click **Clear** to delete the markers of other photos and only display the current photo's marker.

Figure 44 Google Maps



3.4.3 Slideshow and Cooliris (Photos)

In a **Photo** menu click the **SlideShow** button to display the menu's files as a slideshow. Move your cursor over the slideshow's screen to display full screen, previous, pause, and next buttons for controlling the slideshow.

Figure 45 Slideshow



When the Cooliris plugin is installed in your browser, click the **Launch Cooliris** button to display your photos as a 3-D wall for quick browsing.

3.4.4 Favorite

Use the **Favorite** menu to manage your playlists.

3.4.4.1 Shared Playlist

Use **Favorite > Shared Playlist** to view and play playlists that you created externally (in iTunes, Windows Media Player, VLC media player, or Winamp for example) and saved to the NSA. When using zPilot to move files to the NSA, playlists are automatically put into the music share.

3.4.4.2 My Favorite

Use **Favorite > My Favorite** to create, edit, and play playlists. These playlists are specific to the NSA and cannot be used in external music players.

Figure 46 Favorite > My Favorite



This table describes labels in this menu.

Table 9 Favorite > My Favorite

LABEL	DESCRIPTION
New	Click this to create a new playlist.
Edit	Double-click a playlist or select it and click Edit to go to a screen where you can remove songs from the playlist.
Delete All	Within a playlist click Delete All to remove all of the playlist's songs.

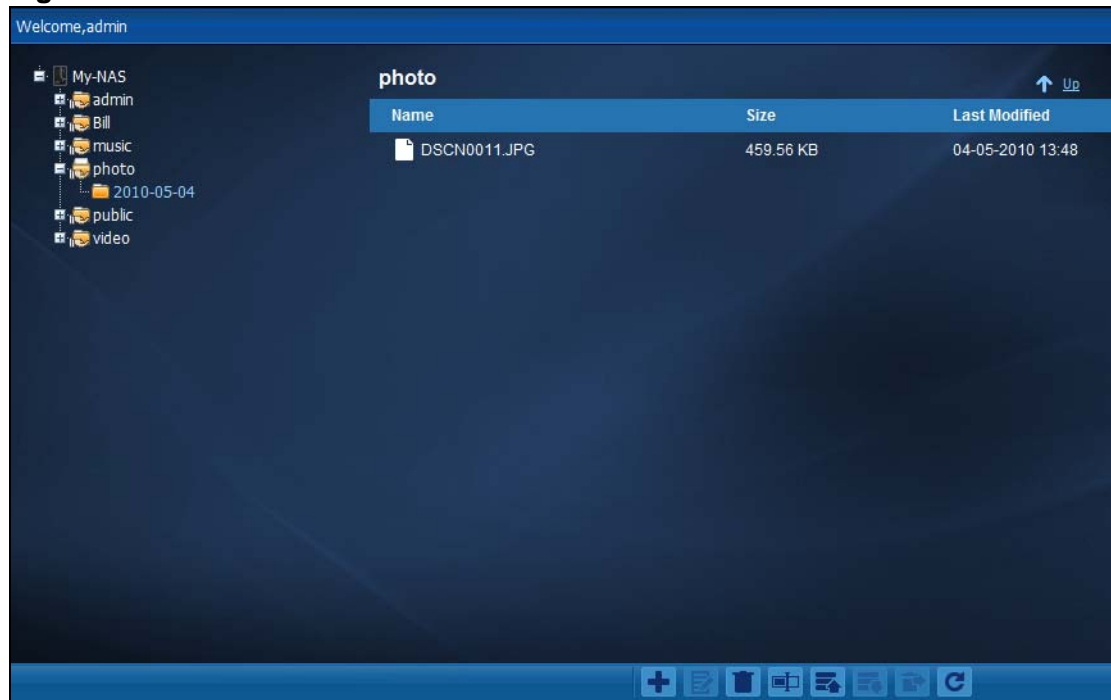
3.4.5 File Browser

Click **File Browser** to open the following screen. Use the file browsing screens to play, open, upload, and download files. A share is a set of user access permissions for a specific folder on a volume (gives someone access to a folder). It is equivalent to the Windows concept of a shared folder, but the access rights are independent of the folder (you configure the share and the folder separately). You

can map a share to a network drive for easy and familiar file transfer for Windows users.

- A folder icon with a hand indicates a share.
- The administrator owns and manages the public shares.
- Double-click a media file to open it. Double-click other types of files to be able to save them.
- Click to the right of a file or folder name to select it.
- Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.
- Drag and drop files to open a screen that lets you choose whether to copy or move them.
- You can upload files of up to 2 GB in size.
- You can download individual files of up to 4 GB in size with Mozilla Firefox and Internet Explorer 7 and later or up to 2 GB in size with Internet Explorer 6.

Figure 47 File Browser

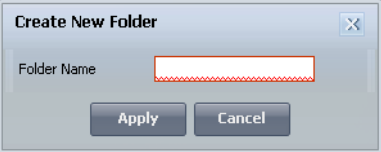
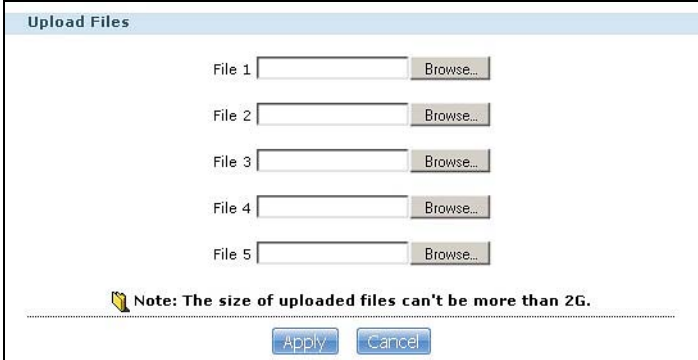


The following table describes the labels in this screen.

Table 10 File Browser

LABEL	DESCRIPTION
Up	Click this to go to the next higher layer in the share's folder tree.
Name	This column identifies the names of folders and files in the share. Click a file's file name to open the file or save it to your computer. Click a folder's name to display the folder's contents.
Size	This column displays a file's size in bytes.

Table 10 File Browser (continued)

LABEL	DESCRIPTION
Last Modified	This column displays the last time the file or folder was changed (in year-month-day hour:minute:second format).
Create New Folder	<p>Click this to open the following screen where you can create a new folder within the share.</p>  <p>Specify a name to identify the folder. See Section 3.4.6 on page 62 for more information on folder names. Click Apply to create a folder or click Cancel to exit this screen.</p>
Configure Share	Select a share and click this link to open a screen where you can see and configure share management details.
Upload	<p>Click this to open the following screen where you can add files to the share.</p>  <p>Use the Browse button to locate your file/s and click Apply to upload the file. Click Cancel to close this screen.</p> <p>Note: Do not refresh the screen while an upload is going on.</p>
Download	<p>Select a file and click this to save the file to your computer.</p> <p>Note: Do not refresh the screen while a download is going on.</p>
Restore	When you are in a recycle bin folder, select a folder or file and click this to restore it.

3.4.5.1 Configure Share Screen

In the **File Browser** screen, select a share and click **Configure Share** to open the following screen where you can see and configure share management details.

Figure 48 File Browser > Configure Share

The following table describes the labels in the this screen.

Table 11 File Browser > Configure Share

LABEL	DESCRIPTION
Share Name	Configure a name to identify this share. Type a share name from 1 to 239 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing local share. See Section 3.4.6 on page 62 for more information on share names. This is not configurable for the NSA's default admin, music, photo, public, and video shares.
Volume	This shows the volume the share is on. It is read-only.
Make this share owned by	Select the administrator or user account that is to own (manage) this share. The share owner controls access rights to the share. This is not configurable for the NSA's default admin and public shares.
Enable This Share	Select this option to allow users to access this share. When this option is not selected, you cannot see and access this share.
Enable Recycle Bin	Select this option to keep deleted items in a recycle bin. When you delete an item, a recycle folder is created within the share, and the deleted item is stored in the recycle bin. Later if you want to retrieve a deleted item, you can select the item from the recycle folder and move/copy the item to another share.
Publish this share to Media Server	Select this option to make the share's files available to media clients.
Publish this share to Web	Select this option to let people use a web browser to access this share's files without logging into the Home screens.

Table 11 File Browser > Configure Share (continued)

LABEL	DESCRIPTION
Share Access	<p>Select who can access the files in the share and how much access they are to be given. If you publish the share to the media server or the web, all users will have at least read-only access to the share, regardless of what you configure here.</p> <p>Select Keep it private to owner to allow only the share owner to read files in the share, delete files in the share and save files to the share.</p> <p>Select Make it public to allow anyone (with or without a user account on the NSA) to read files in the share, delete files in the share and save files to the share.</p> <p>Select Advanced to select which individual users can read the share's files, which users can delete the share's files, and which users are blocked from doing either.</p>
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

3.4.6 Share and Folder Names

The name can only contain the following characters:

- Alphanumeric (A-z, 0-9) and Unicode.

The NSA allows FTP access to shares, folders or files with names encoded in the UTF-8 (8-bit UCS/Unicode Transformation Format) format. So your FTP client must support UTF-8 in order to access shares, folders or files on the NSA with Unicode names.

- Spaces
- _ [underscores]
- . [periods]
- - [dashes]

Other limitations include:

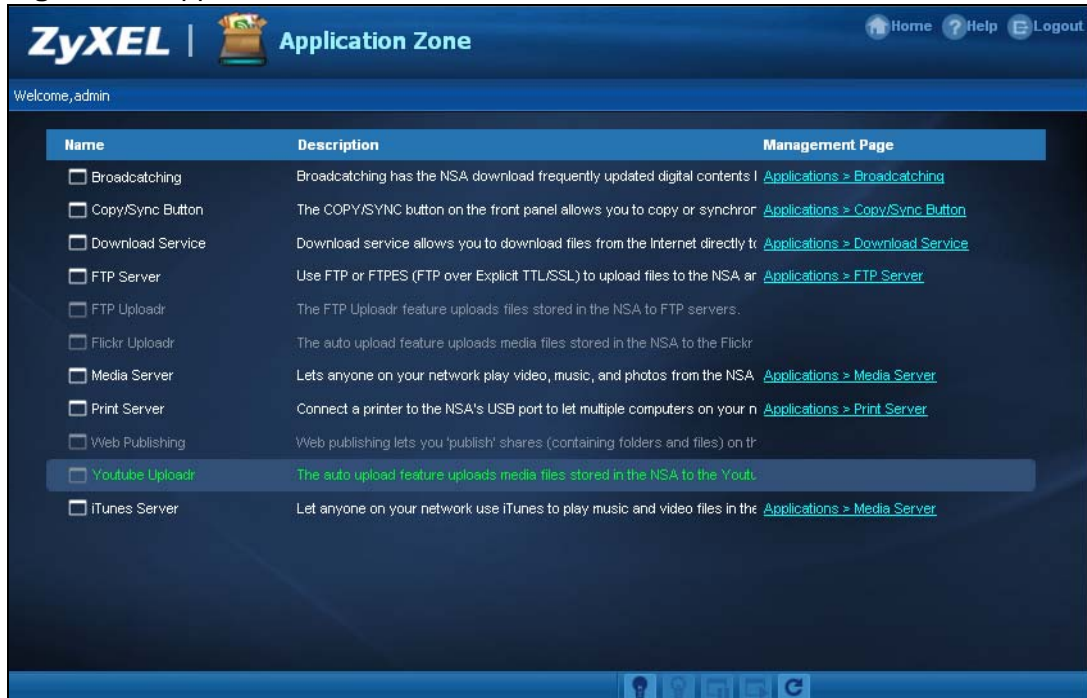
- All leading and trailing spaces are removed automatically.
- Multiple spaces within names are converted to a single space.
- Share names must be unique (they cannot be the same as other share names).
- The NSA creates automatic volume names for external (USB) disk volumes. These are a type of share, so the share name you configure cannot conflict with the external (USB) disk volume names. "ExtVol1" or "ExtVol2" are examples of external (USB) disk volume names.
- Folder names must be unique (they cannot be the same as other folder names).
- The minimum character length of a name is one character, that is a name cannot be blank.
- The maximum character length of share name is 239 characters.

- Unicode is supported for share names, although your FTP client must support UTF-8. Full support should be available in all Windows versions after Windows 2000.

3.4.7 Application Zone

Administrators can click **Application Zone** to go to a screen where you can enable or disable various applications for file sharing and downloading.

Figure 49 Application Zone



The following table describes the labels in the this screen.

Table 12 Application Zone

LABEL	DESCRIPTION
Name	This is the name of the application.
Description	This is a brief description of the application. See Chapter 9 on page 185 for more information.
Management Page	Click this link to go the application's management page where you can configure settings for it. See Chapter 9 on page 185 for more information.
Enable	Select a disabled application and click this to turn on the application. Some applications are always enabled and cannot be disabled.
Disable	Select an enabled application and click this to turn off the application. Select the Flickr or Youtube Uploadr entry and click this to cancel all uploading. Some applications are always enabled and cannot be disabled.

Table 12 Application Zone (continued)

LABEL	DESCRIPTION
Pause	Select the Flickr or Youtube Uploadr entry and click this to pause current uploading. Resume will resume current uploading.
Resume	Select the Flickr or Youtube Uploadr entry and click this to resume current uploading.

3.4.8 System Settings

Click **System > Settings** to open the following screen. Use this screen to change general settings and an account password.

Figure 50 System > Settings

ZyXEL | System / Settings

Welcome, admin

Music Setting

Double Click Behavior Setting

Replace current playlist and start to play

Append to current playlist

Photo Slideshow

Slide Effect

Enable Ken Burns

Slide Interval

3 Second(s)

Video Setting

Video Playback

Play Next

Change Password

Account Name

admin

Old Password

New Password

Password (Confirm)

System Language

Language

English

System Administration

[Go to system administration page.](#)

Apply Reset Cancel

The following table describes the labels in this screen.

Table 13 System > Settings

LABEL	DESCRIPTION
Double Click Behavior Setting	Select Replace current playlist and start to play to have double clicking a song cause the NSA to immediately stop any currently playing song and start playing the double-clicked song. Select Append to current playlist to have double clicking a song add a song to the end of the current playlist.
Slide Effect	Enable the Ken Burns effect to have the NSA automatically pan and zoom photos in slideshows. Disable it to display photos in slideshows normally.
Slide Interval	Select how long to display each image in a slideshow before changing to the next.
Video Playback	Select Play Next to play the rest of the video files in a folder. So for example, a folder has video files 1~10 and you play video 3. When video 3 finishes the device continues playing the rest of the videos in the folder (4~10). It does not loop back and play videos 1 and 2.
Account Name	Type the user name of the account for which you want to change the password.
Old Password	Type the user's current password.
New Password	Create a new password for the user. You can type from one to 14 single-byte (no Chinese characters allowed for example) ASCII characters.
Password (Confirm)	You must type the exact same password that you just typed in the above field.
Language	Select the web configurator language from the drop-down list box.
Go to system administration page	This link appears when you are logged in as the administrator. Click it to open the advanced administration screens. See Section 3.5 on page 66 for more on the advanced administration screens.
Apply	Click this to save your changes.
Reset	Click this to refresh the screen.
Cancel	Click this to exit the screen without saving your changes.

3.5 Administration Screens

The **System > Administration** link displays when you log in as the administrator. Click **System > Administration** in the **Home** screen to open the advanced administration screens.

The **Status** screen is the first advanced administration screen that displays.

Figure 51 Status



3.5.1 Global Administration Icons

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

Table 14 Global Labels and Icons

LABEL/ICON	DESCRIPTION
Language	Select the web configurator language from the drop-down list box.
Help	Click this to open web help specific to the screen you are in.
About	Click this to view the model name, firmware version and copyright.
Home	Click this to return to the Home screens.
Logout	Click this at any time to exit the web configurator. This is the same as clicking the Logout link at the bottom of the navigation panel.

3.5.2 Navigation Panel

The navigation panel on the left of the Web Configurator screen (**2**) contains screen links. Click a link to display sub-links. There are no sub-links for the **Status** screen. Certain screens also contain hyper links that allow you to jump to another screen.

The following table describes the navigation panel screens.

Table 15 Screens Summary

LINK	SCREEN	FUNCTION
Status		This screen shows system information, the status of the volumes, and the users who are currently using the NSA.
System Setting	Server Name	Specify the NSA's server name and workgroup name.
	Date & Time	Chose a time zone and/or allow the NSA to synchronize with a time server.
Storage	Volume	View volume and disk information and create and edit volumes. A volume is a storage area that can span one or more internal disks or a single external (USB) disk.
Network	TCP/IP	Assign the NSA a dynamic or static IP address and DNS information.
	UPnP Port Mapping	Configure your Internet gateway to allow access from the WAN (Internet) to services on the NSA.
	PPPoE	Configure PPPoE settings for a direct Internet connection.

Table 15 Screens Summary (continued)

LINK	SCREEN	FUNCTION
Applications	FTP Server	Enable FTP file transfer to/from the NSA, set the number of FTP connections allowed, an FTP idle timeout, and the character set.
	Media Server	Enable or disable the sharing of media files and select which shares to share.
	Download Service	Have the NSA handle large file downloads.
	Web Publishing	Let people use a web browser to access files in shares without logging into the Home screens.
	Broadcatching	Subscribe the NSA to feeds to download frequently updated digital content like TV programs, radio talk shows, Podcasts (audio files), YouTube videos, or even BitTorrents.
	Print Server	View and manage the NSA's list of printers and print jobs.
	Copy/Sync Button	Copy or synchronize files between a USB device and the NSA.
	Package	Set up more useful applications in your NSA. The NSA can download multiple packages/files at once and automatically goes through all the installation steps.
	Auto Upload - Flickr/YouTube	Upload files in selected shares to your Flickr and/or YouTube accounts.
	Auto Upload - FTP Uploadr	Upload files in selected shares to FTP servers.
Sharing	Users	View, create and edit administrator and user accounts to let people use the NSA.
	Groups	View, create and edit groups. Groups allow you to organize users into specific groups. You can create shares accessible only by the group members.
	Shares	View, create and edit shares. Shares are shared folders to which you can allow specific users read/write access rights.
Maintenance	Power	Configure power saving settings for the NSA and have the NSA turn itself off and on or reboot according to the schedules you configure.
	Log	View the NSA's logs and configure how you want to receive the log reports.
	Configuration	Back up and/or restore the NSA configuration file.
	SSL	Configure HTTPS and the NSA's SSL certificate.
	FW Upgrade	Upload/upgrade new firmware to your NSA.
	Shutdown	Restart the NSA or shut it down.
Logout		Click this to exit the web configurator. This is recommended to prevent unauthorized administrator access to the NSA.

3.5.3 Main Window

The main window (**3**) shows the screen you select in the navigation panel. It is discussed in the rest of this document.

The **Status** screen is the first administration screen to display. See [Chapter 5 on page 149](#) for more information about the **Status** screen.

3.5.4 Status Messages

The message text box at the bottom of the screen (**4**) displays status messages as you configure the NSA.

3.5.5 Common Screen Icons

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

Table 16 Common Configuration Screen Icons














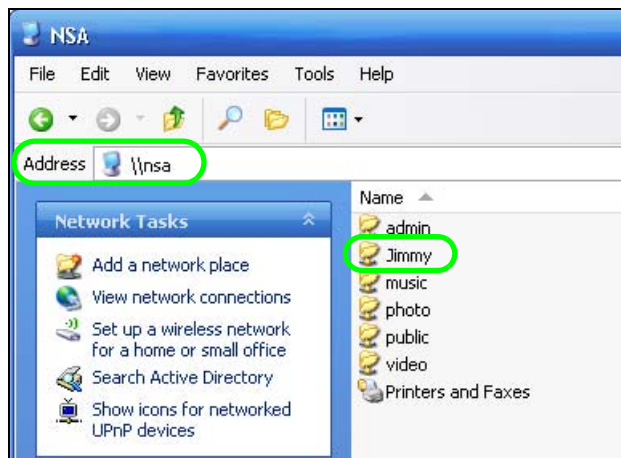
ICON	DESCRIPTION
	Edit Click this to go to a screen where you can change the configuration settings of an entry.
	Delete Click this to delete an entry from the list.
	Edit Click this to jump to related item's configuration screen.
	Refresh Click this to refresh the data for the field or value with which it is associated.
	User See the chapter on user accounts for detailed information on variants of this icon.
	Share See the chapter on shares for detailed information on variants of this icon.
	Healthy This represents a healthy volume.
	Degraded This represents a degraded RAID 1 volume. Replace the faulty disk. If the replacement disk does not contain any partition, the NSA automatically restores the volume. If the replacement disk already contains a volume, you need to delete the volume and then click the Repair icon to fix the degraded RAID volume.

Table 16 Common Configuration Screen Icons (continued)

ICON	DESCRIPTION
	Down This represents a down volume.
	Scan Disk Click this to scan a hard disk for file system errors.
	Eject Click this before you remove an external hard drive so that you do not lose data that is being transferred to or from that hard drive.
	Locate Click this to cause the LED on the external storage device to blink.
	Repair If you replace a faulty disk with a disk that contains a volume, you need to delete the volume and then click this to fix the degraded RAID volume.

3.5.6 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**, **Video**, **Music**, and **Photo** folders until you create other shares on the NSA. This session is then displayed as shown in the following figure.



Tutorials

4.1 Overview

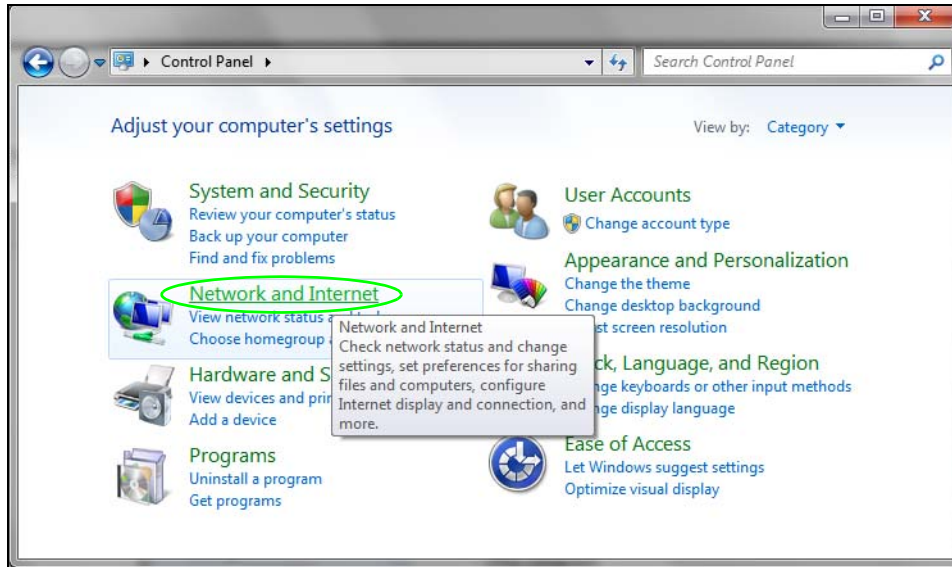
This chapter provides tutorials that show how to use the NSA.

- [Windows 7 Network](#), see [page 71](#)
- [Windows 7 Network Map](#), see [page 75](#)
- [Playing Media Files in Windows 7](#), see [page 78](#)
- [Windows 7 Devices and Printers](#), see [page 78](#)
- [Creating a Volume](#), see [page 81](#)
- [Deleting a Volume](#), see [page 84](#)
- [File Sharing Tutorials](#), see [page 85](#)
- [Download Service Tutorial](#), see [page 94](#)
- [Broadcatching Tutorial](#), see [page 110](#)
- [Copy and Flickr Auto Upload Tutorial](#), see [page 115](#)
- [FTP Uploadr Tutorial](#), see [page 116](#)
- [Web Configurator's Security Sessions](#), see [page 121](#)
- [Using FTPES to Connect to the NSA](#), see [page 133](#)
- [How to Use the BackupPlanner](#), see [page 134](#)

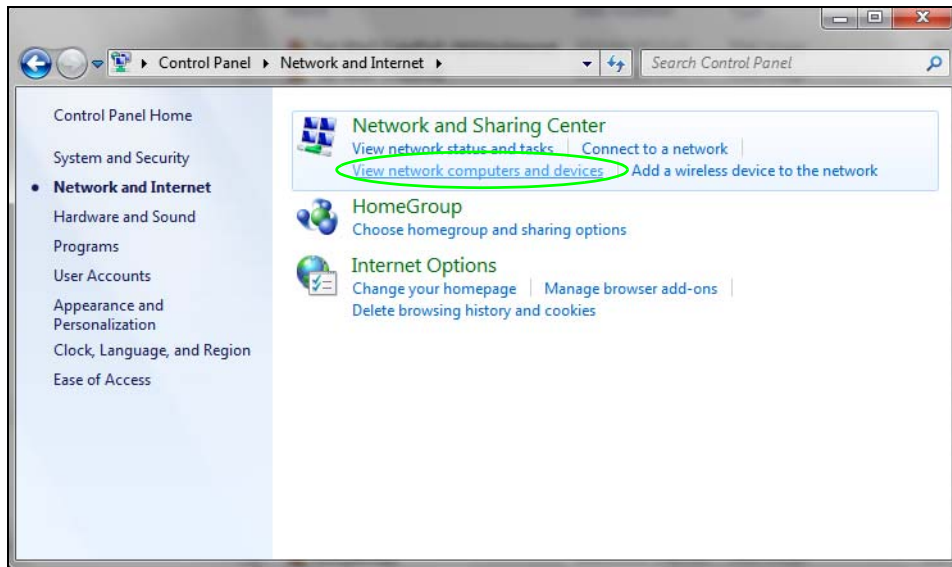
4.2 Windows 7 Network

To see your NSA in a Windows 7 home or work network:

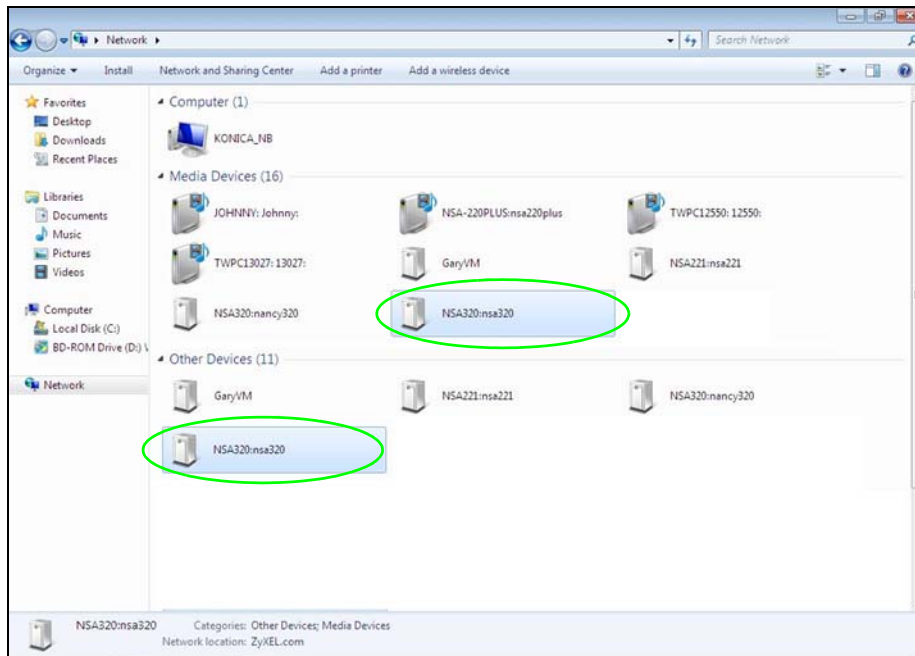
- 1 Click **Start > Control Panel**. Set **View by** to **Category** and click **Network and Internet**.



- 2 Click **View network computers and devices**.



- The NSA icon displays twice because the NSA is both a media server and a storage device. Double-click either NSA icon to open the Web Configurator login screen.



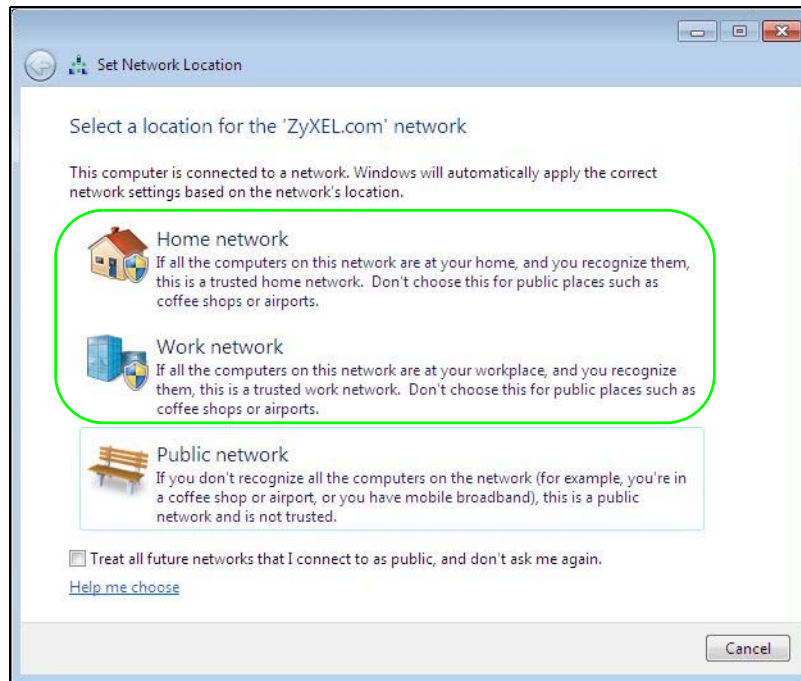
4.2.1 If the NSA Icon Does Not Display

The network containing the NSA must be set as a home or work network in order for the NSA icons to display. If the network containing the NSA displays as "Public":

- Click **Network and Sharing Center** and then the network's link (circled in the figure).

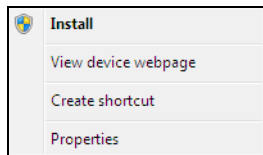


- 2 Use the **Set Network Location** screen to set the network's location to home or work.



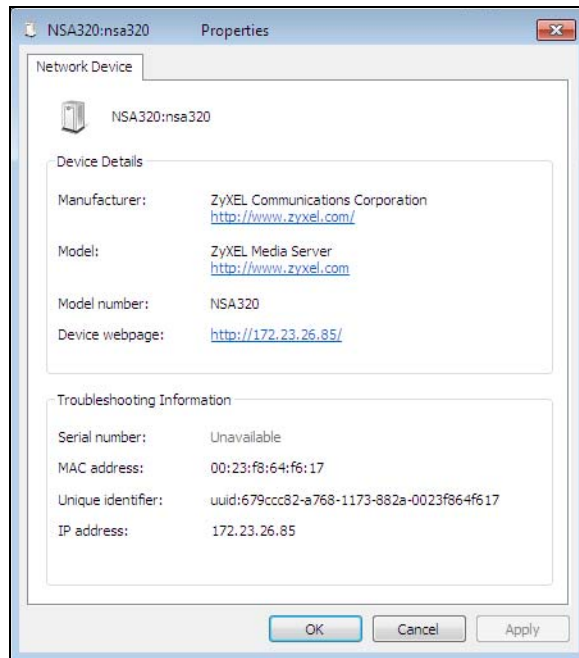
4.2.2 NSA Icon Right-click Options

Right-click the NSA's icon to see these options:



- **Install/Uninstall:** Click **Install** to add the NSA as a device in your computer. After you install the NSA you can see it in the computer's list of devices (see [Section 4.5 on page 78](#)). Click **Uninstall** to remove the NSA from the list of devices installed in your computer.
- **View device web page** opens the Web Configurator login screen.
- **Create shortcut** adds a desktop shortcut to the Web Configurator login screen.

- **Properties** opens a window of NSA details and troubleshooting information.

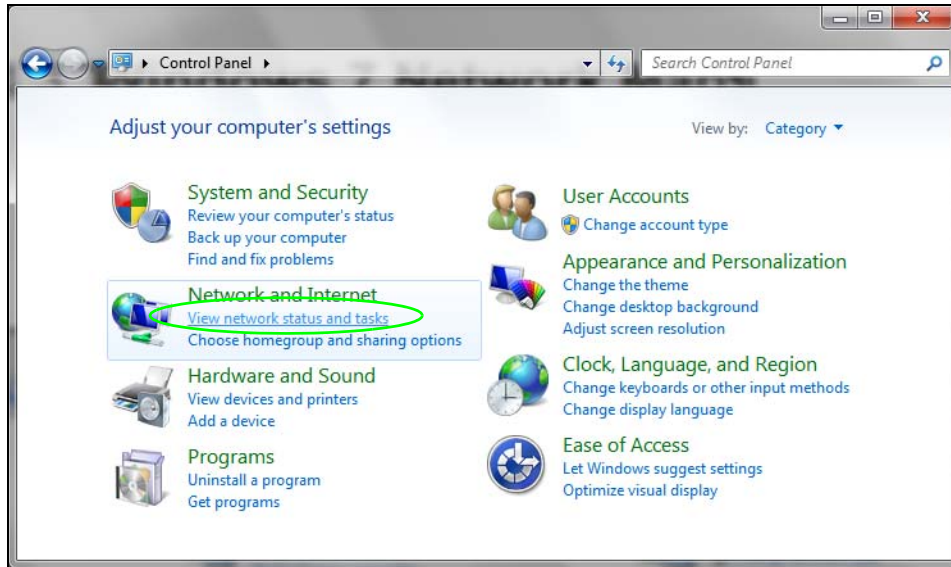


- **Manufacturer** identifies the company that produced the NSA.
- **Model** identifies the NSA model.
- **Model number** identifies the NSA model number.
- **Device webpage** shows the IP address for accessing the Web Configurator.
- **Serial number** is unavailable because the NSA does not have one.
- **MAC address** is the NSA's unique physical hardware address (MAC). You need the MAC address to register the product at myZyXEL.com. Customer support may also request it for troubleshooting purposes.
- **Unique identifier** is a unique UPnP ID that the NSA generated.
- **IP address** is the NSA's IP address. It is also the IP address for accessing the Web Configurator.

4.3 Windows 7 Network Map

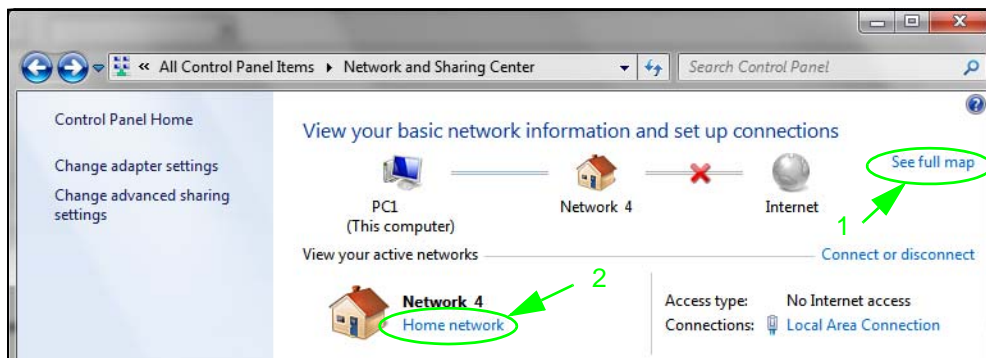
To see your NSA in a Windows 7 home or work network map:

- 1 Click **Start > Control Panel > View network status and tasks** (or **Network and Sharing Center** if you view the Control Panel by icons).

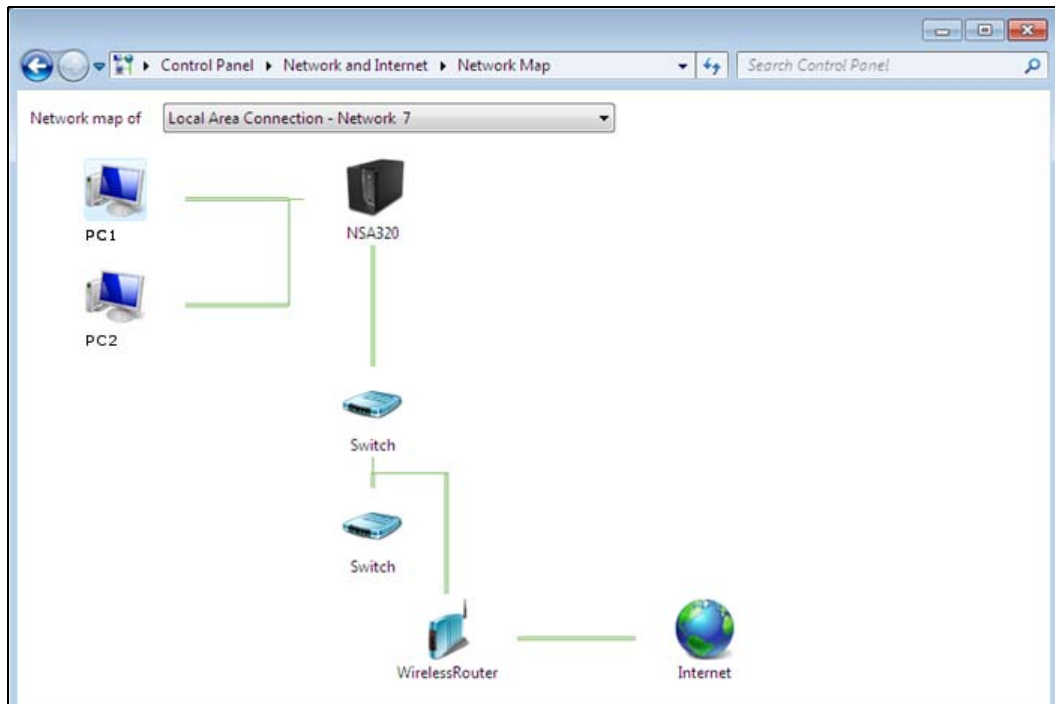


- 2 Click **See full map** (1 in the figure).

The network containing the NSA must be set as a home or work network in order to use the full map feature. If the network containing the NSA displays as "Public", click the network's link (2 in the figure, although it is already set to home here) and use the **Set Network Location** screen to set the network's location to home or work (see [page 74](#)).



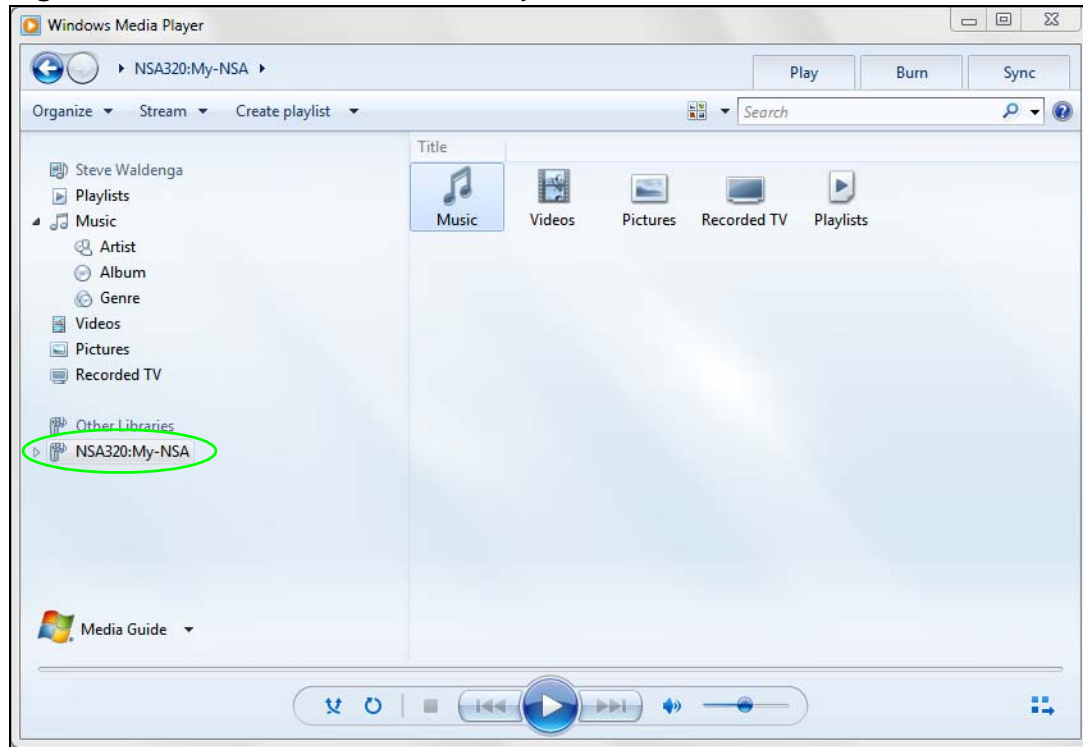
- 3 Double-click the NSA's icon to open the Web Configurator login screen. See [Section 4.2.2 on page 74](#) for the NSA icon's right-click options.



4.4 Playing Media Files in Windows 7

In Windows 7, the NSA automatically displays as a library in Windows Media Player.

Figure 52 NSA in Windows Media Player

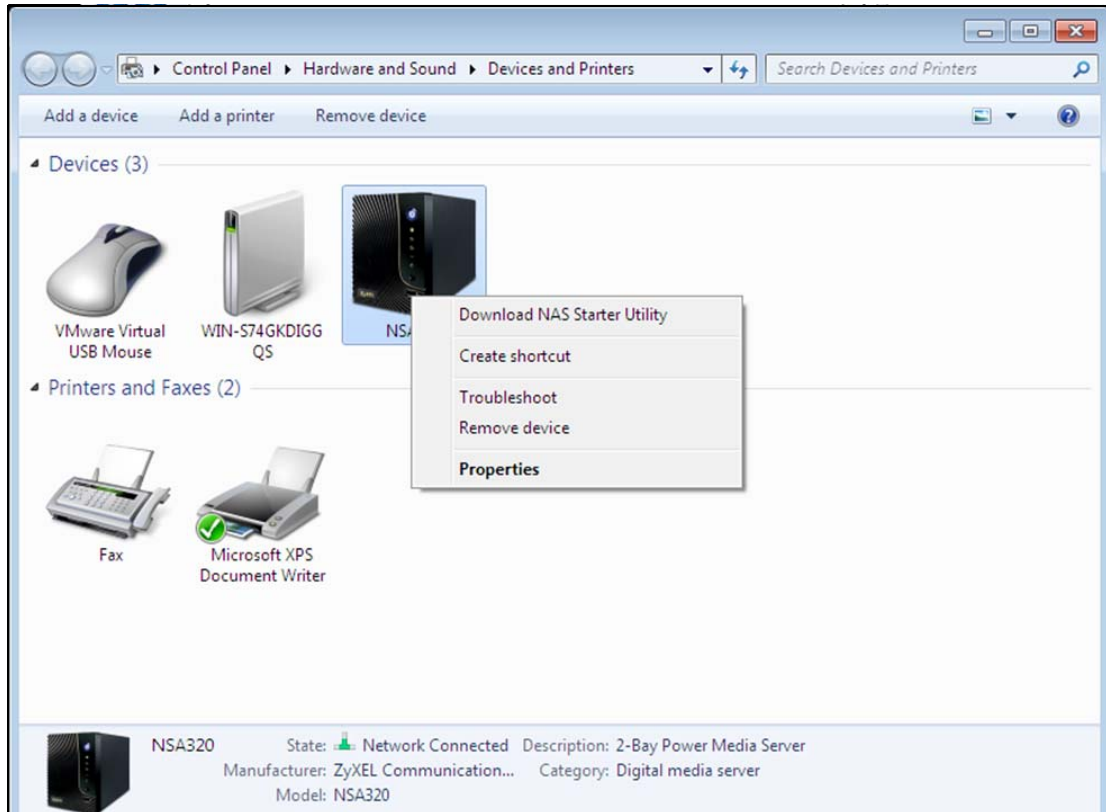


4.5 Windows 7 Devices and Printers

After you use the NSA's network icon's install option you can manage the NSA from the Windows 7 **Devices and Printers** folder.

Click **Start > Control Panel > Hardware and Sound > Devices and Printers**. Select the NSA icon to display information about the NSA. Double-click the NSA

icon to open a properties window (see [page 75](#)). Right-click the icon to display these options:



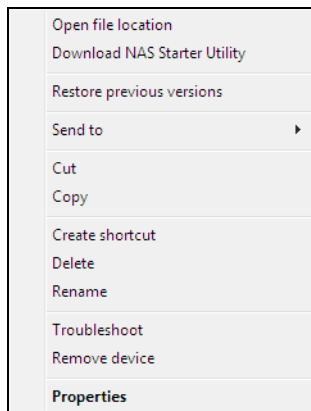
- **Download NAS Starter Utility** downloads the NSA's Starter Utility. It lets you find, set up, and manage the NSA as well as copy files to it and access the files on it. See [Chapter 2 on page 29](#) for details.
- **Create shortcut** has Windows make a desktop shortcut to this screen.
- **Troubleshoot** opens Windows' device troubleshooting wizard.
- **Remove device** removes the NSA from the Windows 7 **Devices and Printers** folder.
- **Properties** opens a window of NSA details and troubleshooting information (see [page 75](#)).

4.5.1 Windows 7 Desktop Shortcut

This is the NSA's desktop shortcut. Double-click it to open a properties window (see [page 75](#)).



- 1 Right-click the NSA's desktop shortcut icon to see these options:



- **Open file location** takes you to the Windows 7 **Devices and Printers** folder.
- **Download NAS Starter Utility** downloads the NSA's Starter Utility. It lets you find, set up, and manage the NSA as well as copy files to it and access the files on it. See [Chapter 2 on page 29](#) for details.
- **Restore previous versions** is the Windows 7 option for restoring a file or folder. It does not apply to this shortcut.
- **Send** to give you options for copying the shortcut to another location.

- **Cut** removes this shortcut so you can paste it somewhere else.
- **Copy** copies the shortcut so you can paste it somewhere else.
- **Create shortcut** has Windows make a desktop shortcut to this icon.
- **Delete** sends the shortcut to the recycle bin.
- **Rename** lets you change the name of the shortcut.
- **Troubleshoot** opens Windows' device troubleshooting wizard.
- **Remove device** removes the NSA from the Windows 7 **Devices and Printers** folder.
- **Properties** opens a window of details about the shortcut.

4.6 Creating a Volume

This section shows you how to create a volume on your NSA.

Creating a volume deletes all existing data in the hard disk. Make sure you have a backup of your existing data before following the steps in this section.

Your NSA has two bays for Serial Advanced Technology Attachment (SATA) hard disks. The JBOD storage method is used if you are using a single hard disk for your NSA.

This JBOD volume shows up in the **Storage > Volume** screen ([Section 7.4 on page 165](#)) as follows.

The screenshot displays the 'Storage - Volume' management window. It is divided into 'Internal Volume' and 'External Volume' sections. The 'Internal Volume' section contains a table with the following data:

Status	Volume	Disk Configuration	Disk(s)	Capacity	Actions
Healthy	Volume1	JBOD Disk Capacity (JBOD)	disk1	232.28 GB Total 0.41% (982.32 MB) Used 99.59% Free	[Edit] [Scan] [Repair] [Expand] [Migrate] [Delete]

Below the table is a 'Create an Internal Volume' button. The 'External Volume' section is currently empty, with a 'Create an External Volume' button and the text 'There are currently no volumes.'

4.6.1 Creating a RAID 1 Volume

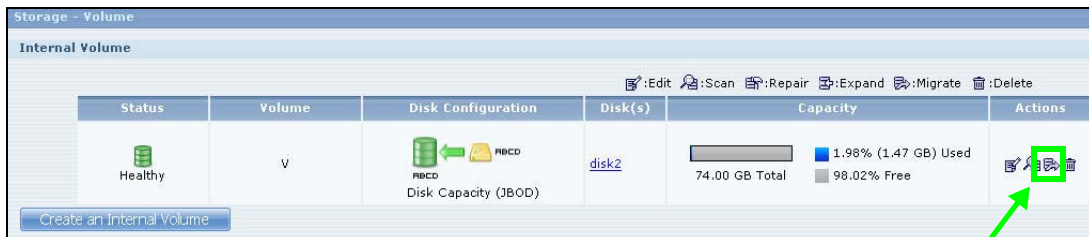
This storage method allows recovery of data if your hard disk fails. To create a RAID 1 volume, you must install two SATA hard disks in your NSA. There are two ways to create a RAID 1 volume:

- Click the **Migrate** button - If you already have a SATA hard disk with a volume and you later install a second SATA hard disk in your NSA, use the **Migrate** button to convert the existing JBOD volume to a RAID 1 volume.
- Click the **Create an internal volume** button - Use this if there are no existing volumes in your NSA.

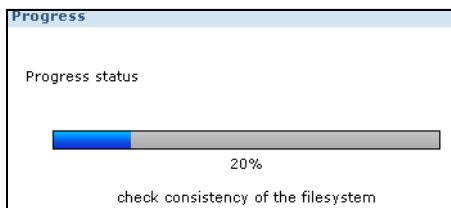
4.6.2 Migrate Button

Do the following steps to create a RAID 1 volume.

- 1 Once you install a second SATA hard disk in the NSA, the **Storage > Volume** screen shows the **Migrate** button.



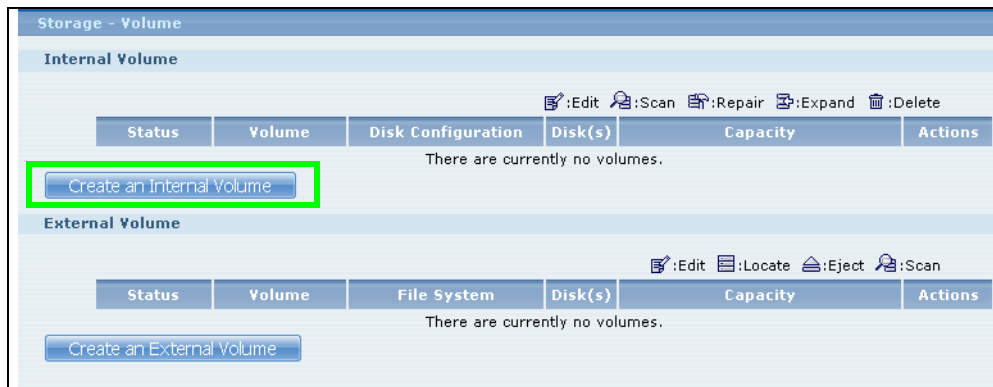
- 2 Click the **Migrate** button and you can see the following progress bar. Wait for the RAID 1 volume to be created. This may take quite a while depending on how much data you have in the original volume.



4.6.3 Create an Internal Volume Button

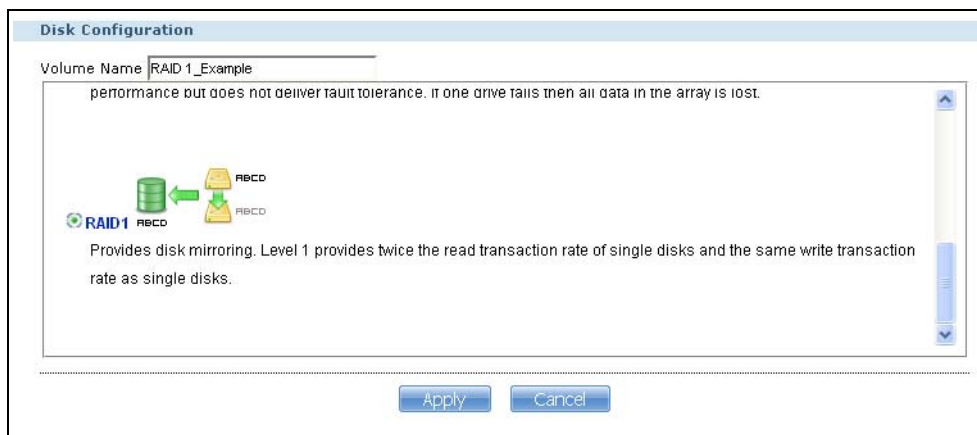
If you do not have an existing volume in the **Storage > Volume** screen, do the following steps to create a RAID 1 volume.

- 1 In the **Storage > Volume** screen, click **Create an Internal Volume**.

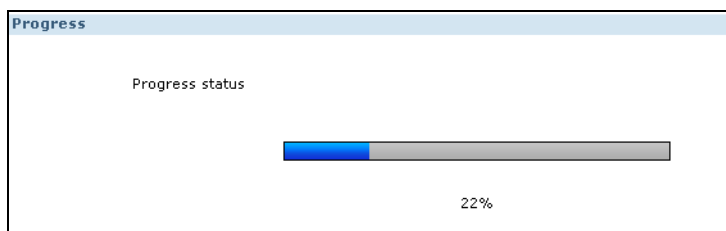


- 2 In the **Disk Configuration** screen, you can select the storage method.
 - Type in the **Volume Name** for your RAID 1 volume. The volume name can be 1 to 31 characters (a-z, 0-9, " " [spaces], "_", and ".").
 - Choose **RAID 1** and click **Apply**.

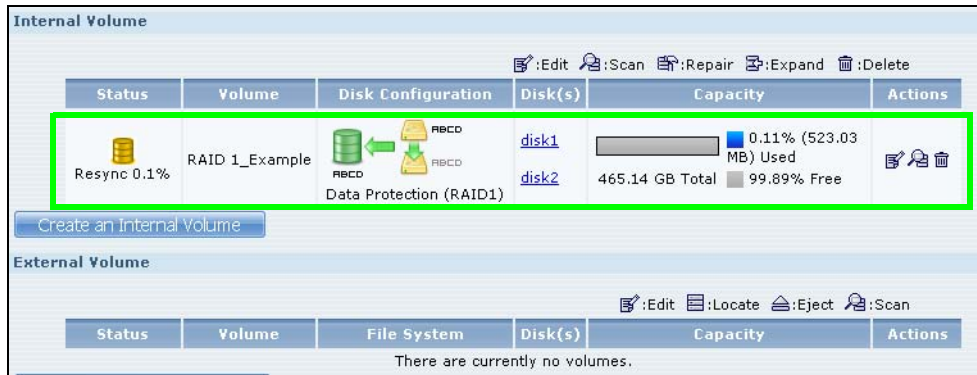
This deletes all existing data in the SATA hard disk. Make sure you have a backup of any existing data in the hard disk.



The NSA starts creating the volume and you can see the following progress bar. Wait for the RAID 1 volume to be created.



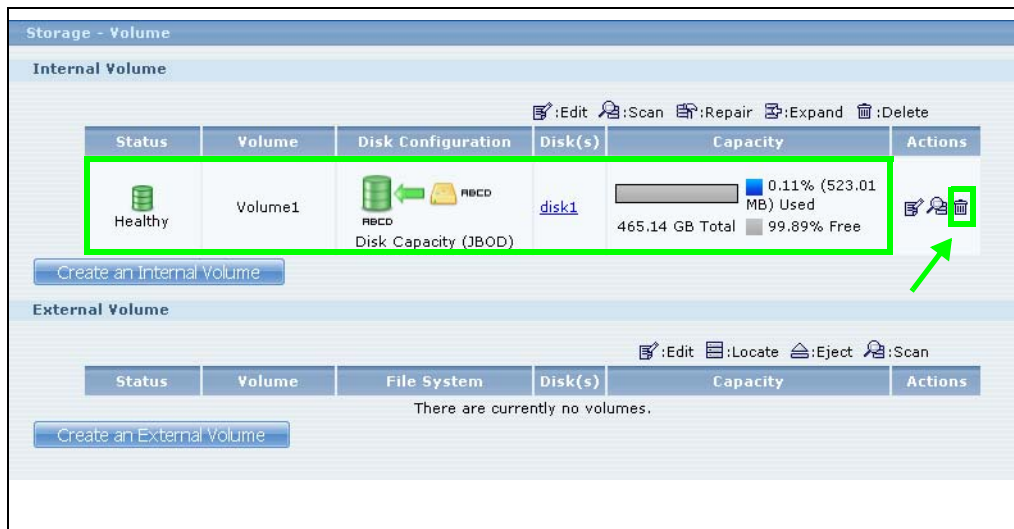
- 3 The **Storage > Volume** screen displays with your RAID 1 volume.



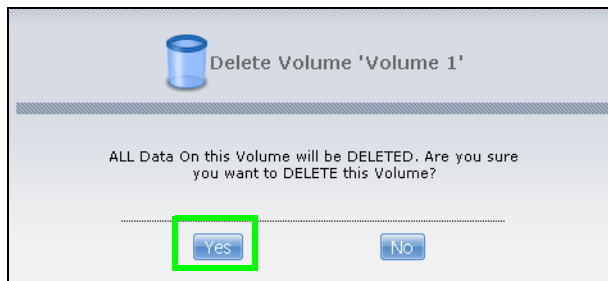
4.7 Deleting a Volume

Delete an existing volume in your NSA by doing the following steps.

- 1 In the **Storage > Volume** screen, select the volume you want to delete and click the delete icon.



- 2 A confirmation window appears as follows. Click **Yes**.



This deletes all existing data in the volume. Make sure you have a backup of any existing data in the hard disk.

4.8 File Sharing Tutorials

The following sections cover using the NSA for file sharing. This chapter assumes you have already followed the Quick Start Guide instructions to perform initial setup and configuration (so you have a working volume). See the rest of this User's Guide for details on configuring the NSA's various screens.

4.8.1 Creating a User Account

Bob wants to create accounts for his sons Jimmy and Kevin. This is how he would do it.

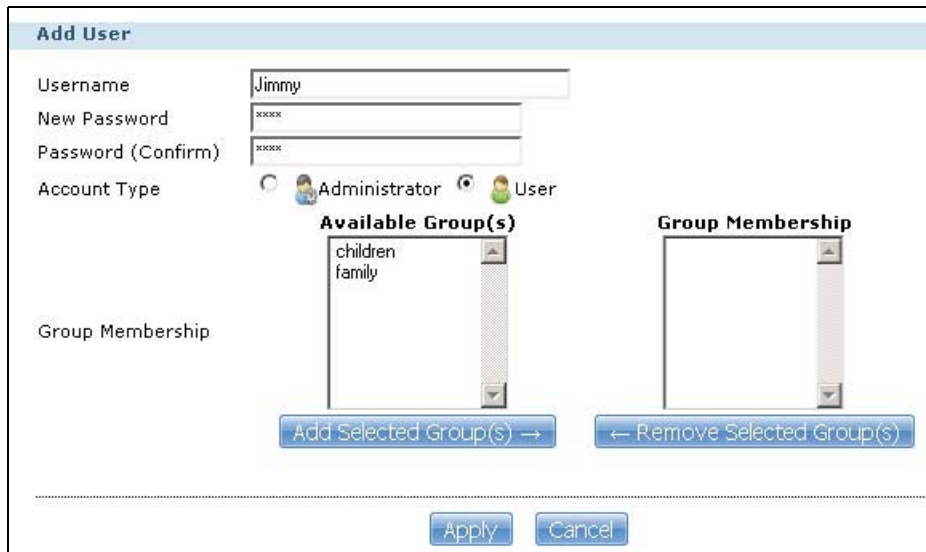
- 1 Log into the NSA web configurator (see [Section 3.3 on page 50](#)) and click **System** > **Administration** to go to the configuration screens.



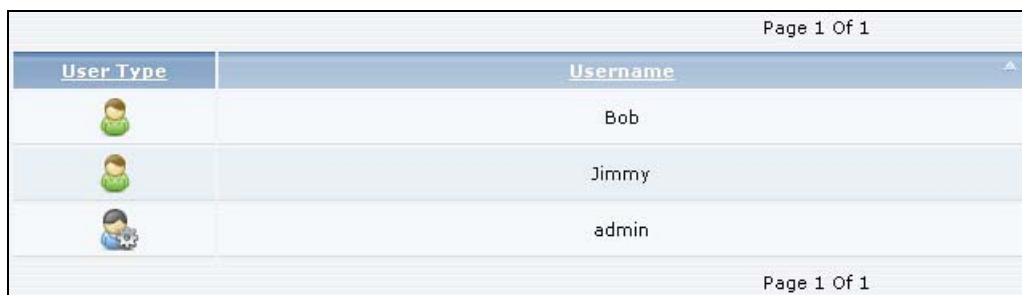
- 2 Click **Sharing > Users** to open the **Users** screen. Then click **Add User**.



- 3 Configure the screen as follows and write down the username and password to give to Jimmy. If the username and password are the same as Jimmy's Windows login, Jimmy will not need to enter a username and password when he logs into his share from his computer. Set the **Account Type** to **User** so Jimmy doesn't get to configure the whole NSA. Click **Apply** to create the account.



- 4 The account now displays in the **Users** screen.



Now that Bob has created Jimmy's account, he can go through the steps again to create another account for Kevin. After both accounts are created, he can go to [Section 4.8.2 on page 87](#) to create shares for Jimmy and Kevin.

4.8.2 Creating a Share

Suppose Bob has already created separate accounts for his sons Jimmy and Kevin. Now Bob wants to create a share for each son. He also wants to make sure that each son can only access his own share (to keep them from deleting each other's files). This is how he would do it.

- 1 In the NSA's administration web configurator screens, click **Shares > Add Share**. Click **Add Share** to create a new share.



- 2 Specify a name for the share and select which volume it should be on. Configure the screen as follows. Then click **Edit**.

Add Share

Share Name:

Volume:

Make this share owned by:

Enable This Share

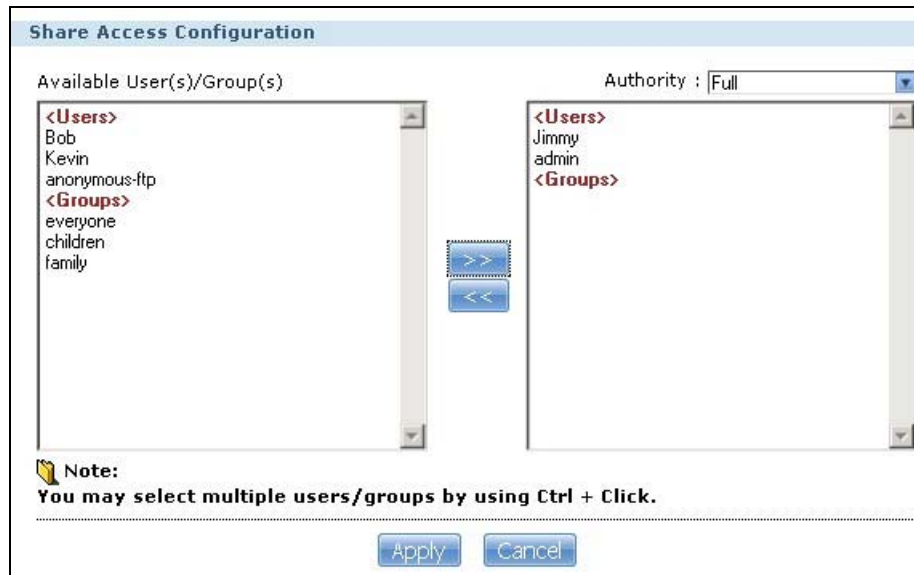
Enable Recycle Bin

Publish this share to Media Server

Publish this share to Web

Share Access:

- Configure the screen as follows to give Jimmy full access right to the share. Then click **Apply** to create the share.



Now that Bob has created Jimmy's share, he can go through the steps again to create another share for Kevin.

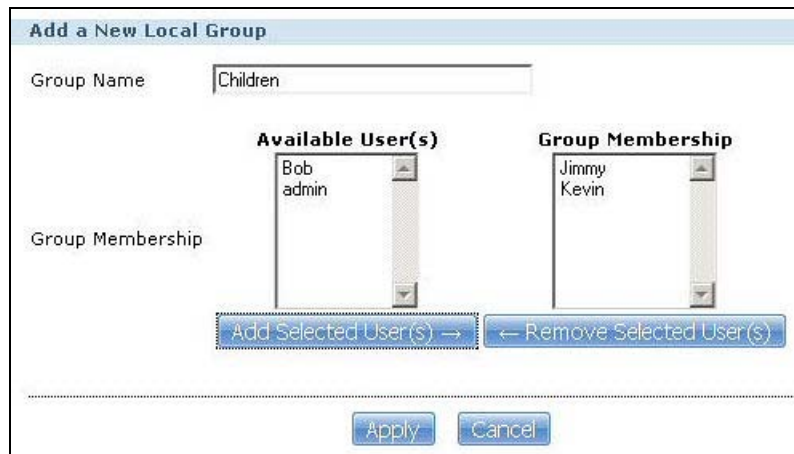
4.8.3 Creating a Group

After creating user accounts for Jimmy and Kevin, Bob wants to create a group for his sons and another one for the parents. Bob can assign access rights to his sons' group for certain shares such as a cartoons share and allow only the parents' group to access the scary movie share. This is how he would create the group.

- In the NSA's administration web configurator screen, click **Groups > Add Group**.



- Specify a name for the group. Select the user(s) you want to add to the group from the **Available User(s)** list and click **Add Selected User(s)**. Configure the screen as follows. Then click **Apply** to create the group.

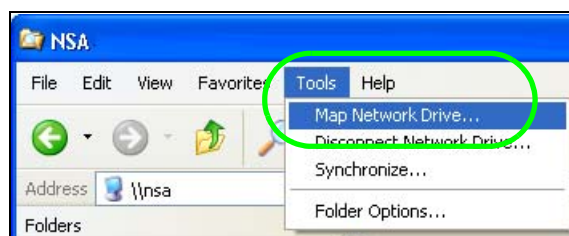


Now that Bob has created a group for Jimmy and Kevin, he can go through the steps again to create another group for the parents. Then he can see the rest of the tutorials for how to use the groups in assigning access rights to shares.

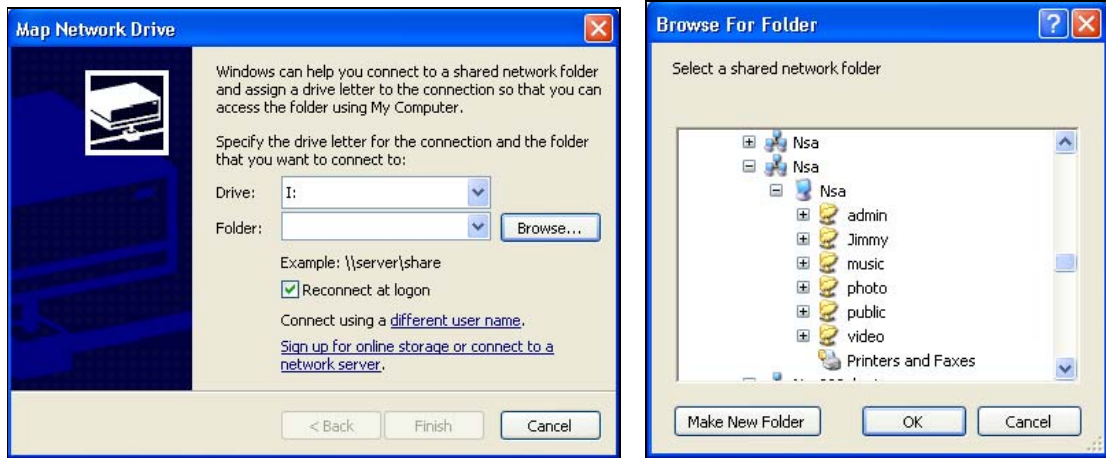
4.8.4 Accessing a Share From Windows Explorer

If you map a NSA share (where data is stored) to a Windows network drive, you can use Windows Explorer to transfer files to and from the NSA as if it was another folder on your computer. Here he maps Jimmy's share to Jimmy's computer.

- Start Windows Explorer and go to the NSA's server name ("nsa320" is the default) or IP address.
- Click **Tools > Map Network Drive**.



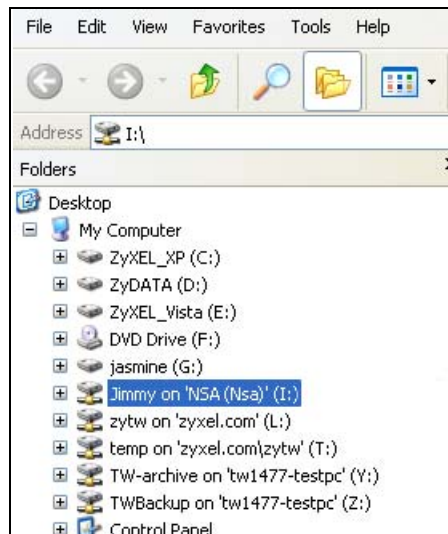
- 3 Select the network drive that you want to map the NSA to from the **Drive** list box. This example uses **I**. Then browse to and select the share on the NSA. Click **Finish**.



- 4 Enter the username and password for Jimmy's account and click **OK**. You do not need to do this if the username and password are the same as Jimmy's Windows login.



- After the mapping is done, you can then simply copy and paste or drag and drop files from/to your local computer's drives to or from this network folder. Just like the NSA's share was another folder on your computer.

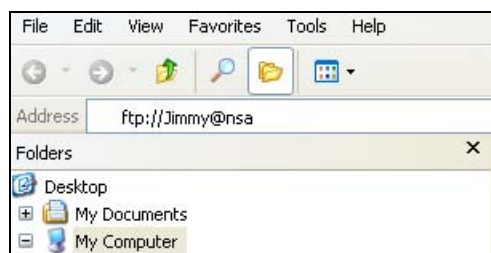


Now that Bob has mapped Jimmy's share to Jimmy's computer, he can go through the steps again to map Kevin's share to Kevin's computer.

4.8.5 Accessing a Share Using FTP

You can also use FTP to access the NSA. Suppose Jimmy is temporarily using a different computer and wants to access his share without mapping it to the computer. This is how he would do it.

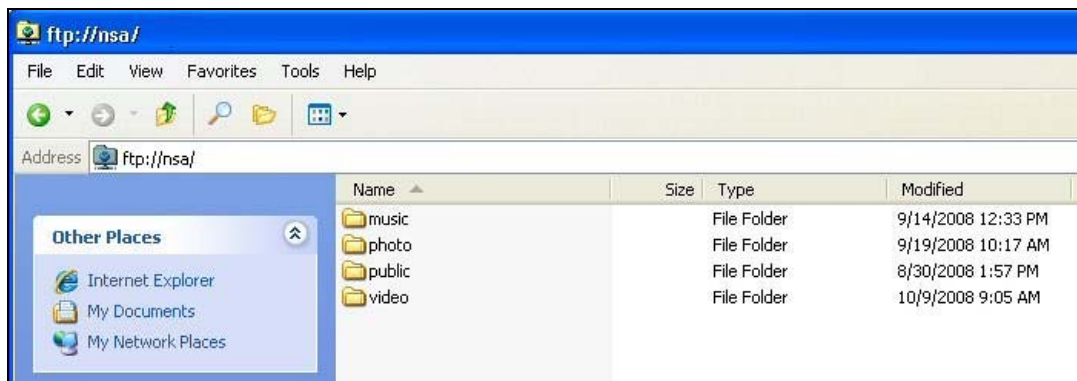
- Open the FTP client (Windows Explorer is used here) and type "ftp://username@server" where "username" is the account's username and "server" is the NSA's IP address or server name.



- 2 Enter your password and click **Login**.



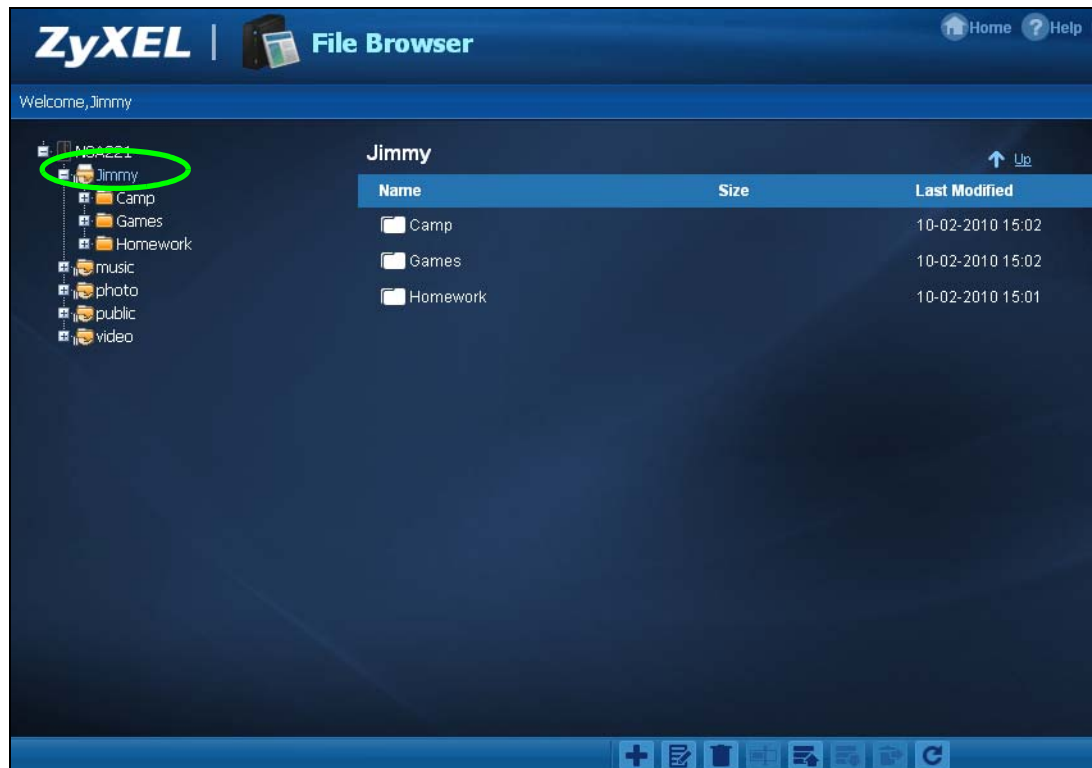
- 3 Now you can access files and copy files from/to your local computer's drives to or from this network folder.



4.8.6 Accessing a Share Through the Web Configurator

You can browse and access files through the web configurator.

- 1 Log into the NSA web configurator (see [Section 3.3 on page 50](#)) using the appropriate user name and password (this example uses Jimmy's) and click **File Browser**. Click a share (the Jimmy share in this example) to see the top level of the share's contents.



- 2 Click a folder's file name to browse the folder. You can open files or copy them to your computer. You can also create new folders and upload additional files to the share.
- 3 Click the logout icon when you are done.

4.9 Download Service Tutorial

This tutorial covers using the NSA to download a file from the Internet. Use this same procedure for BitTorrent downloads as well as regular HTTP (web) and FTP downloads. See [Section 9.11.2 on page 219](#) for more on the download service.

4.9.1 Copying/Pasting a Download Link

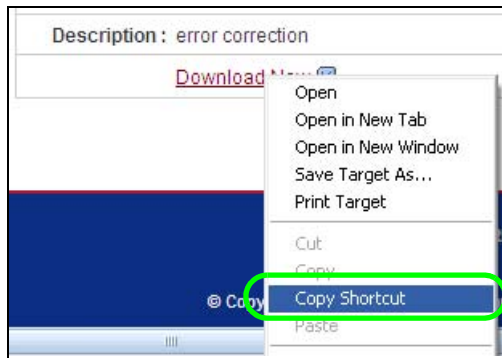
- 1 Open your Internet browser (this example uses Internet Explorer).
- 2 Find a download link for the file you want. In this example, [www.zyxel.com](#) has a **Download Now** link for downloading a datasheet for ZyXEL's GS-2024 (a device for making phone calls over the Internet).



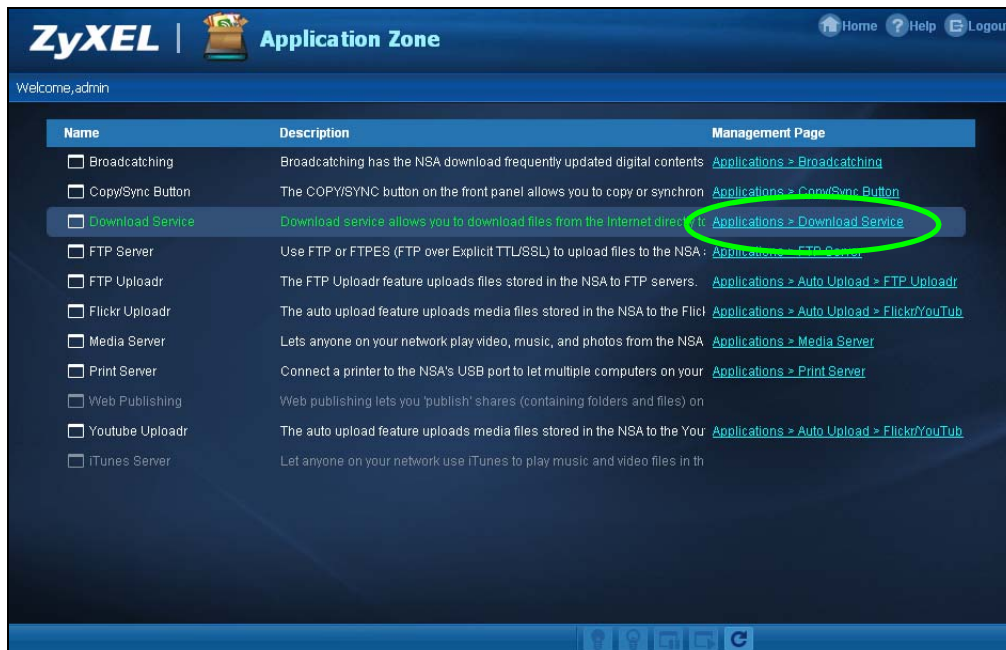
Note: Make sure the link opens either the file you want or a pop-up window about how to handle the file.

Note: It is also OK for the link to open a .torrent file. If you are redirected to a screen that says the download should start in a few seconds, there may be a link to click if the download does not start automatically. See if that link opens the file or the pop-up window.

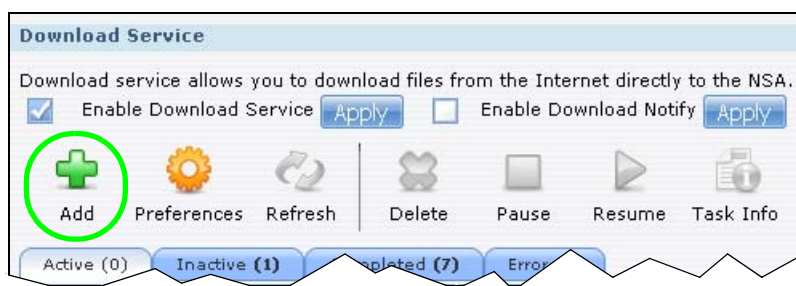
- 3 Right-click the download link and select **Copy Shortcut** in Internet Explorer (or **Copy Link Location** in Firefox).



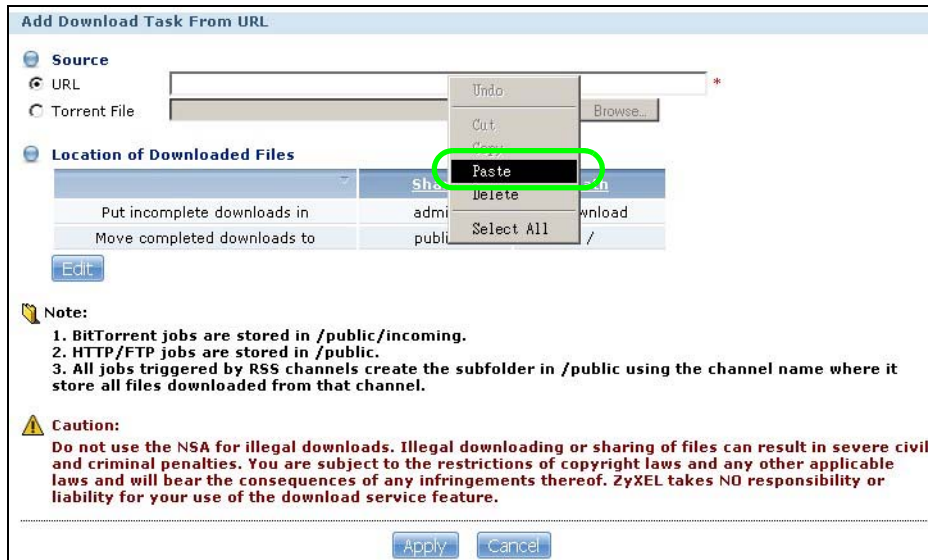
- 4 Log into the NSA web configurator (see [Section 3.3 on page 50](#)) using the administrator account and click **Application Zone** and the **Application Zone > Download Service** link.



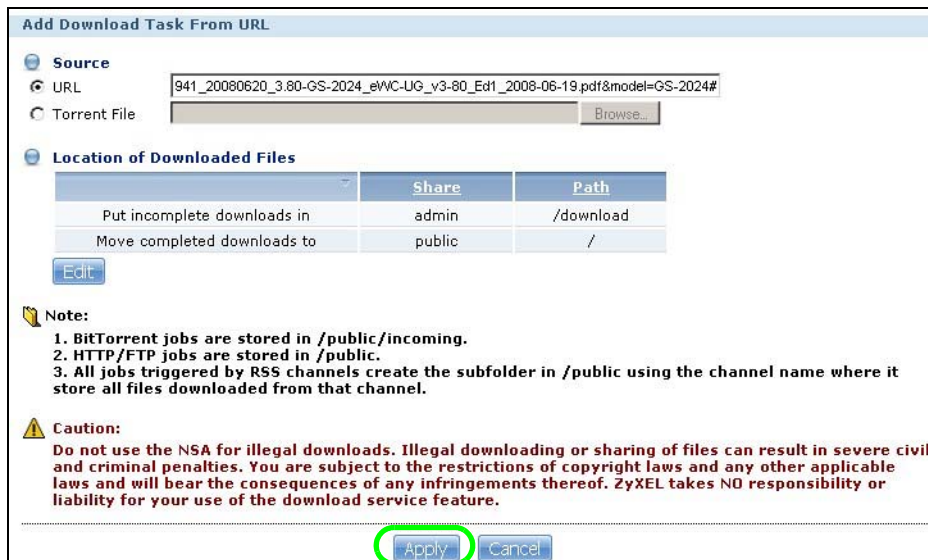
- 5 Click **Add**.



6 Right-click the **URL** field and select **Paste**.



7 The URL displays in the **URL** field. Click **Apply**.



8 After a few moments, the download task appears in the **Download Service** screen's **Active** tab.

The download appears in the **Completed** tab when it is done. By default the NSA stores all downloads in the **admin** share's **download** folder. See [Section 4.8.4 on page 89](#), [Section 4.8.5 on page 91](#), or [Section 4.8.6 on page 93](#) for how to access a share.

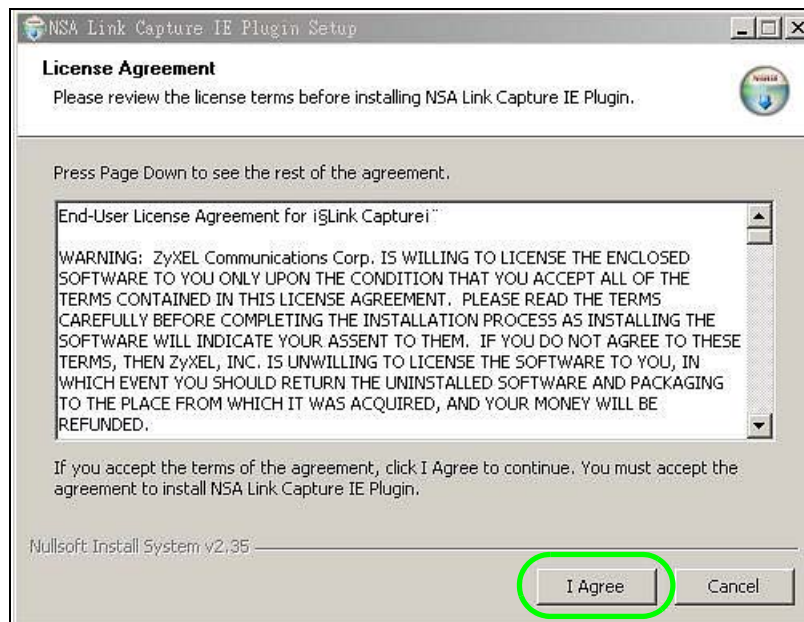
4.9.2 Installing the Link Capture Browser Plugin

In addition to copying and pasting a download link to the **Download Service** screen, you can also install a link capture browser plugin in your web browser. Use the plugin to easily add a download link to the NSA's download service. See [Section 9.11.3 on page 219](#) for more on the link capture browser plugin.

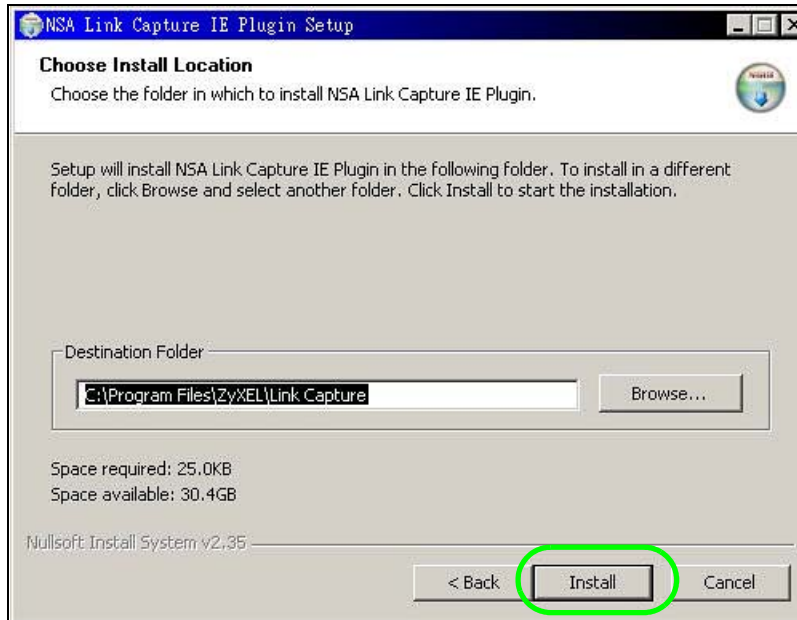
Note: At the time of writing the plugin supports Internet Explorer 6.0/7.0 and Mozilla Firefox 2.0/3.0; it does not support Windows 7.

Internet Explorer

- 1 Open the folder containing the link capture browser plugin.
- 2 Double-click on the plugin to display the following screen. Click **I Agree** to begin installation.



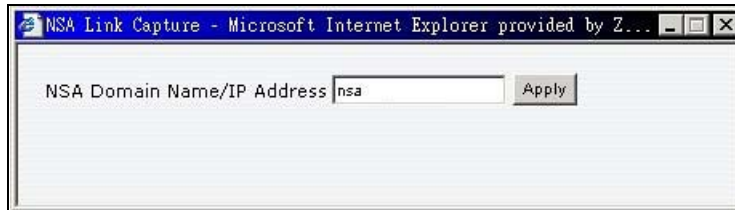
- 3 Select a location to save the plugin and click **Install**. Close the screen once the installation is complete.



- 4 Open Internet Explorer and locate a download link. In this example, www.zyxel.com has a **Download Now** link for downloading a user's guide for ZyXEL's NBG410W3G (a 3G wireless router). Right-click on the download link and select **NSA Setting**.

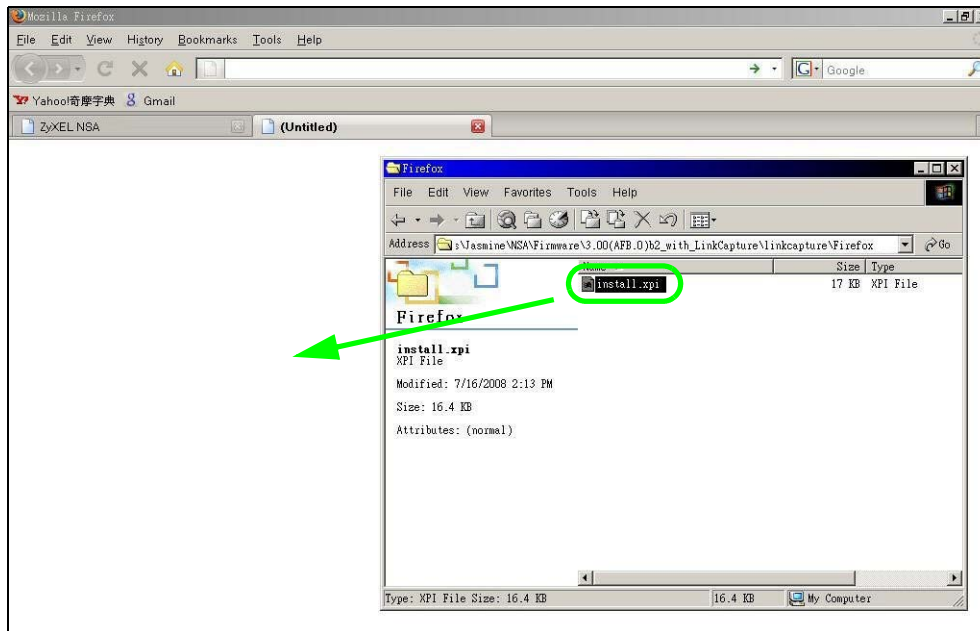


- 5 Enter the NSA's web address (nsa320 by default) and click **Apply**. A warning message displays asking for confirmation. Click **OK** to apply the setting.

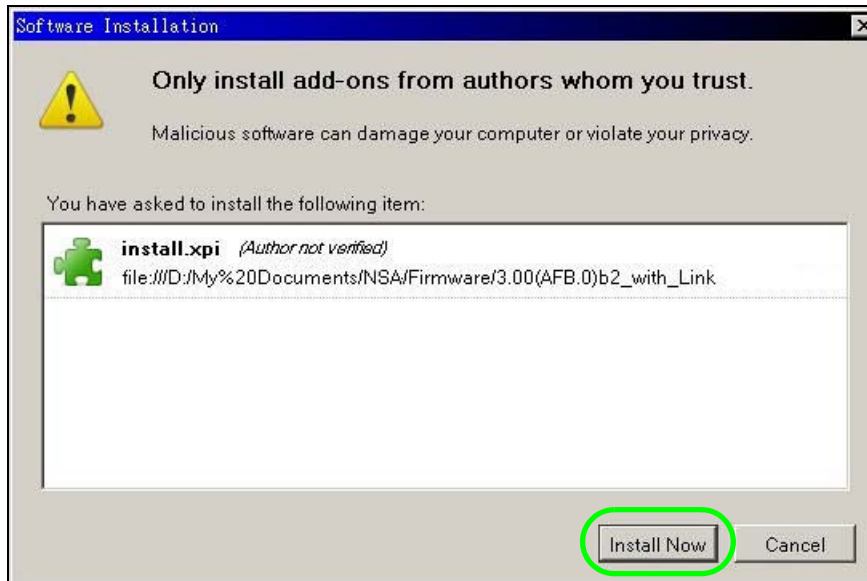


Firefox

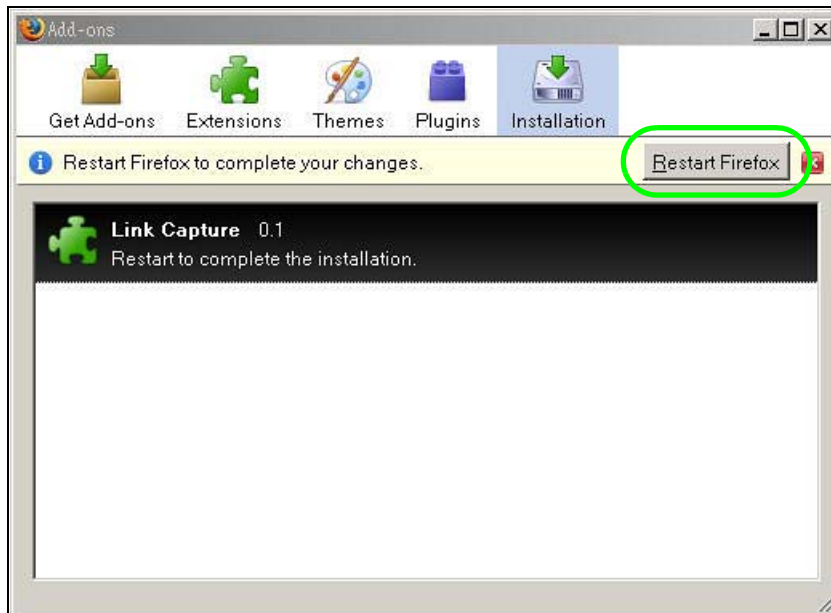
- 1 Open Firefox.
- 2 Open the folder containing the link capture browser plugin.
- 3 To install the plugin, drag and drop the plugin to Firefox.



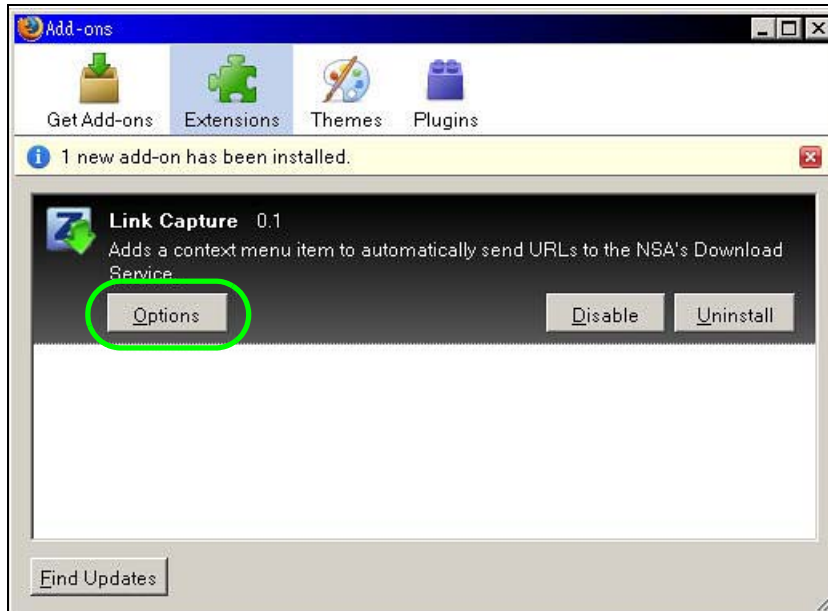
- 4 The following screen displays. Click **Install Now**.



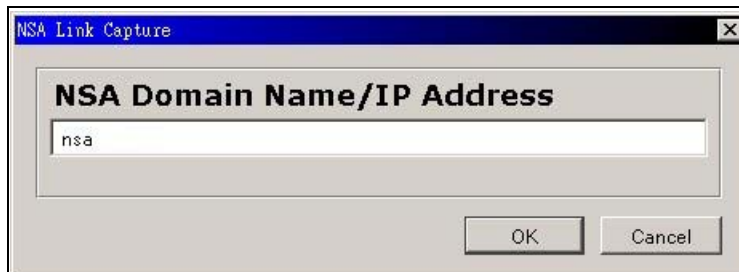
- 5 You need to restart Firefox after the installation.



- When Firefox restarts, a message displays to show the installation succeeded. The plugin is installed as an extension in Add-ons. Click **Options** to configure the NSA's web address.



- Enter the NSA's web address (nsa320 by default) and click **OK**.



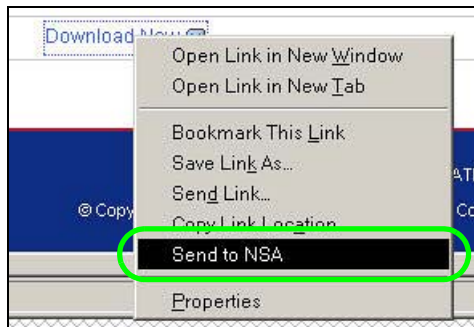
4.9.3 Using the Link Capture Browser Plugin

Once you install the plugin, you may begin sending download links to the NSA from your web browser. This example shows how to send a download link to the NSA's download service using the link capture browser plugin.

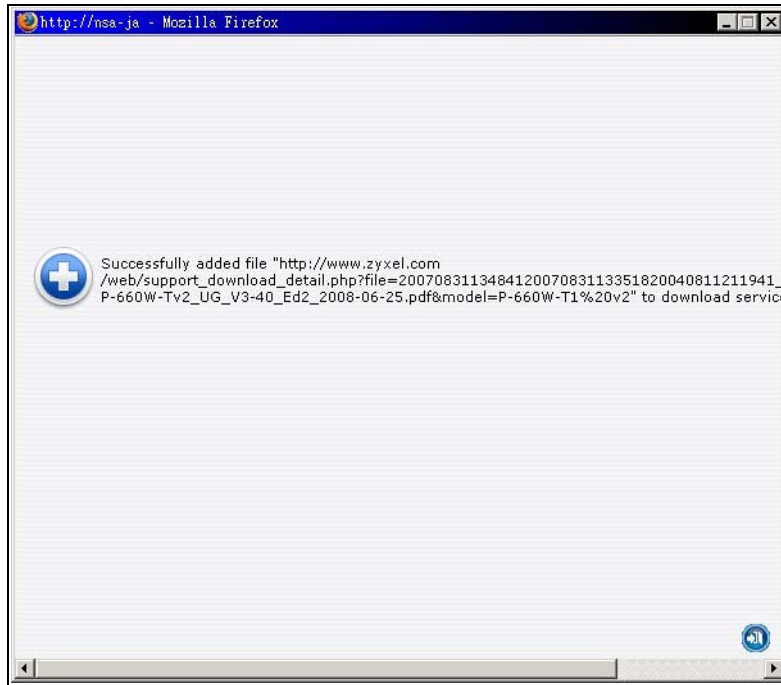
- 1 Open your Internet browser (this example uses Firefox).
- 2 Find a download link for the file you want. In this example, www.zyxel.com has a **Download Now** link for downloading a user's guide for ZyXEL's P-660W-T1 (an ADSL router).



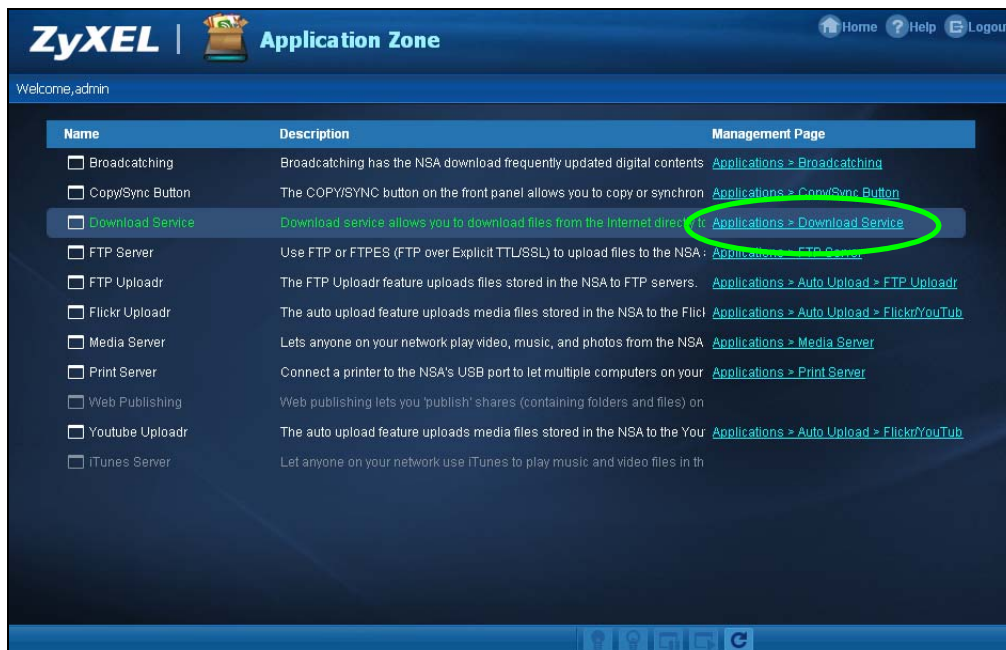
- 3 Right-click on the download link and select **Send to NSA**.



- 4 The login screen shows up. Enter your NSA's login information and click **Login** to send the link to the download service. A confirmation message displays.



- 5 Log into the NSA web configurator (see [Section 3.3 on page 50](#)) using the administrator account and click **Application Zone** and the **Application Zone > Download Service** link.



- The download task appears in the **Download Service** screen's **Active** or **Queue** tab. It may appear in the **Completed** tab if the NSA already finished downloading the file or it may appear in the **Error** tab if the NSA failed to download the file.

By default the NSA stores all downloads in the **admin** share's **download** folder. See [Section 4.8.4 on page 89](#), [Section 4.8.5 on page 91](#), or [Section 4.8.6 on page 93](#) for how to access a share.

4.9.4 Configuring the Download Service Preferences

Once you added a list of download tasks to the NSA (see [Section 4.9.1 on page 94](#) and [Section 4.9.3 on page 102](#)), you can have the NSA download files during a specific time period of the day. You can also configure the BitTorrent settings to control bandwidth and optimize download efficiency.

Say you have the NSA turned on all the time, but you only want the NSA download files at night. Here is how you use the download period control feature to set the time range.

- Click **Applications > Download Service > Preferences** to open the **General Settings** screen.
- Select **Enable Download Period Control** and use the arrows to adjust the time period from 23:30 to 09:00. Click **Apply** to save your changes. The NSA only downloads files within this 9.5-hour period every day.

The screenshot shows the 'Preferences' window for the Download Service, specifically the 'BitTorrent' tab. Under the 'Location of Downloaded Files' section, there is a table with columns for 'Share' and 'Path'. Below this is a 'Note' section with three bullet points. The 'Download Period Control' section is highlighted with a green oval, showing the 'Enable Download Period Control' checkbox checked and the time range set to 23:30 - 09:00. The 'Apply' button at the bottom is also highlighted with a green oval.

	Share	Path
Put incomplete downloads in	admin	/download
Move completed downloads to	admin	/download

Note:

- BT Jobs will be stored in /admin/download/incoming
- HTTP/FTP Jobs will be stored in /admin/download
- Jobs triggered by RSS Channel will create the Channel Name to /admin/download

Download Period Control

Enable Download Period Control

Download Service is active in the specified time period (hh:mm - hh:mm)

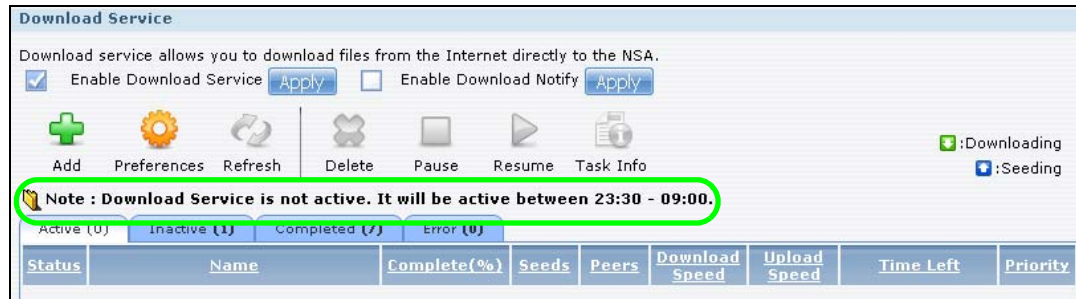
23:30 - 09:00

Apply Reset Cancel

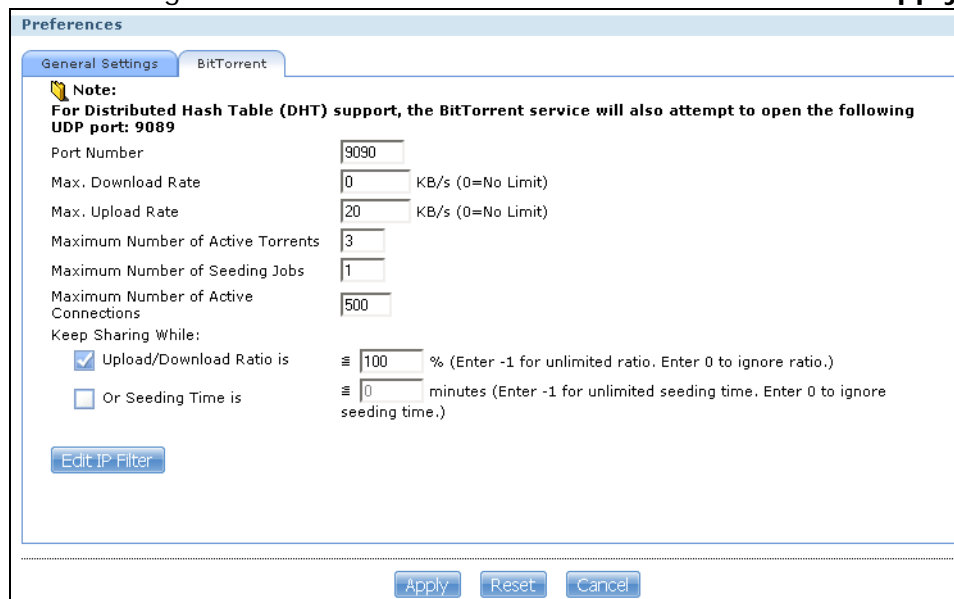
Note: If you configure the **Power On/Off Schedule** feature in the **Power Management** screen, make sure your active download period does not conflict with the power-off period.

Note: If power failure occurs during the active download period, the NSA will verify whether the downloaded files were damaged. If a file is corrupted, the NSA will download the file again. If the file is intact but not completely downloaded, the NSA will resume the download task after it restarts.

- When it is not the download time, you see a message in the **Download Service** screen, indicating the active download period.



Click **Applications > Download Service > Preferences > BitTorrent** to open the following screen. Enter the information below and then click **Apply**.



Here is a list of BitTorrent settings you want to configure for your NSA:

- Limit the maximum upload rate to 20 KB/s.
Enter this value in the **Max. upload rate** field.
- Actively download three torrent files but only upload one at a time.
Enter 3 in the **Maximum Number of Active Torrents** field and enter 1 in the **Maximum Number of Seeding Jobs** field.
- Keep sharing until the NSA has shared equal or greater amount of the downloaded files.
Select the check box and enter 100 in the **Upload/Download Ratio** field.

- Click **Edit IP Filter**. Use an online IP filter table from <http://www.bluetack.co.uk/config/level1.gz> for example to protect BitTorrent downloads.

Enter the URL in the **Update IP Filter from the Internet Every Week** field.

4.9.5 Using Download Service Notification

Use an RSS feed reader on your computer to keep track of files the NSA has downloaded. The following examples show how to subscribe to the NSA's download service notifications. See [Section 9.11.4 on page 220](#) for more on download service notifications.

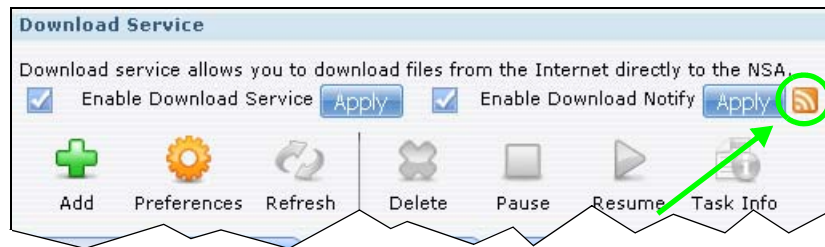
Some RSS readers may not support the NSA's download service notifications. For example, Google Reader cannot support this feature if the NSA has a private IP address.

Note: It is recommended to subscribe to the download service notifications using the built-in reader in Internet Explorer 7 or higher, or Firefox.

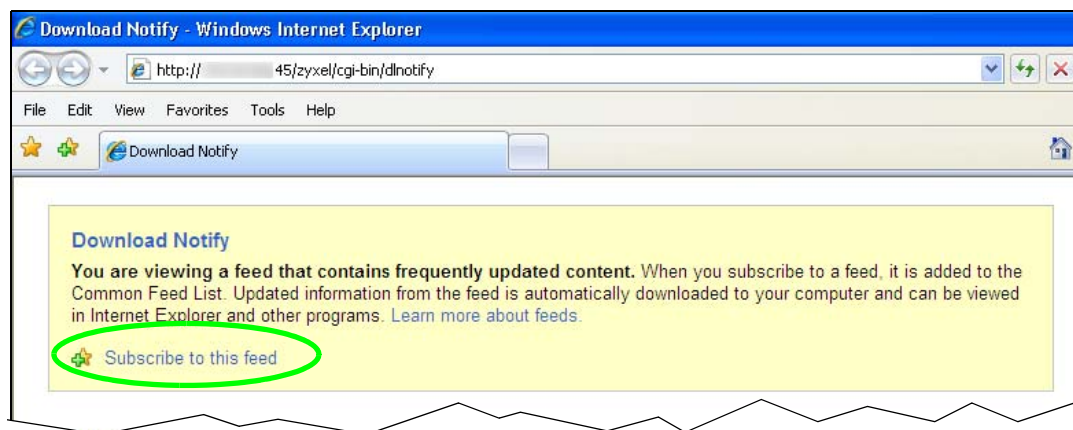
You have to activate this feature in the **Download Service** screen. Click **Applications > Download Service** to open the following screen. Select **Enable Download Notify** and click **Apply**.

Internet Explorer 7 Example

- 1 After you activate download service notification, click the **RSS** feed icon.



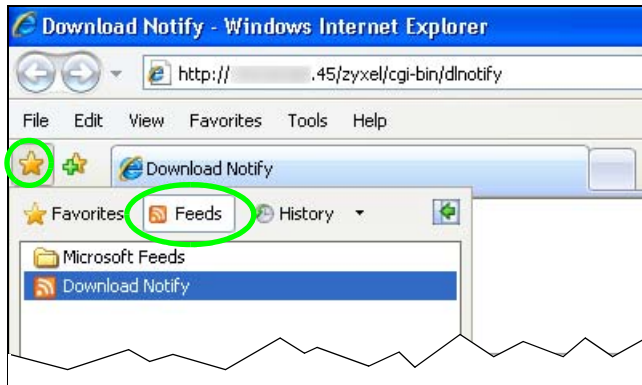
- 2 The following screen displays. Select **Subscribe to this feed**.



- 3 The following screen displays. Click **Subscribe**.

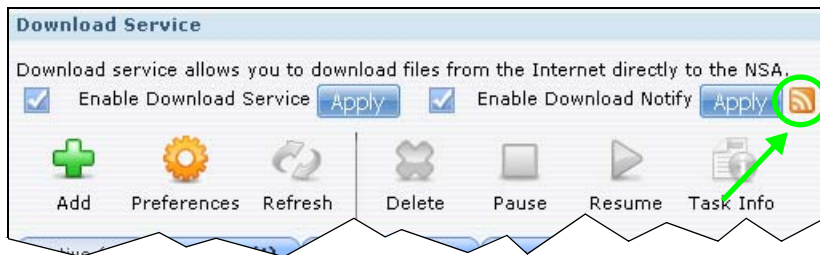


- 4 Click the **Favorite** icon on your browser and select the **Feeds** tab to check the updates of your NSA's download list.

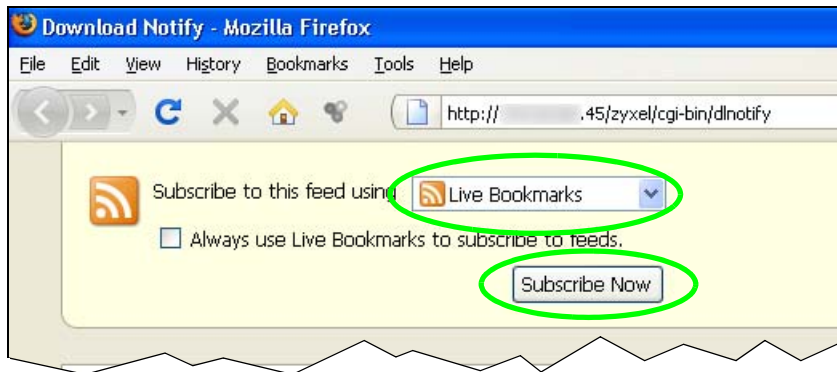


Firefox Example

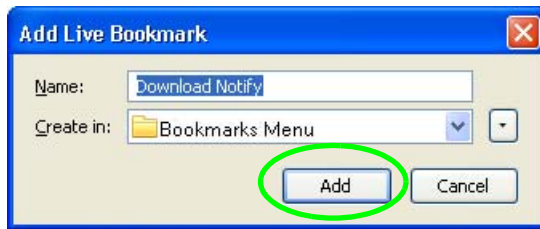
- 1 After you activate download service notification, click the **RSS** feed icon.



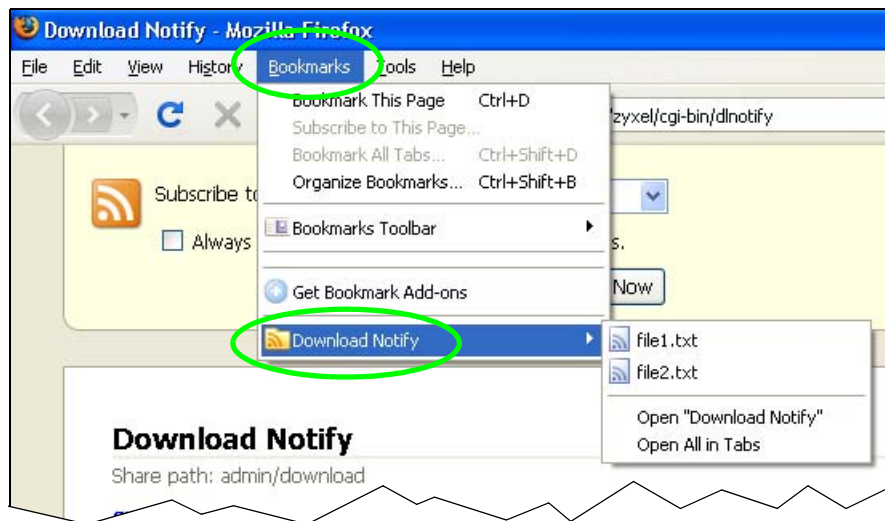
- 2 The following screen displays. Select **Live Bookmarks** from the drop-down list and click **Subscribe Now**.



- 3 The following screen displays. Select **Bookmarks Menu** and click **Add**.



- 4 From the Firefox's **Bookmarks Menu**, select **Download Notify** to check the updates of your NSA's download list.



4.10 Broadcaching Tutorial

Use broadcaching to have the NSA download frequently updated digital content like TV programs, radio talk shows, Podcasts (audio files), and blogs. This example shows how to subscribe the NSA to the CNET TV Internet television channel. See [Section 9.8 on page 206](#) for more on the broadcaching service.

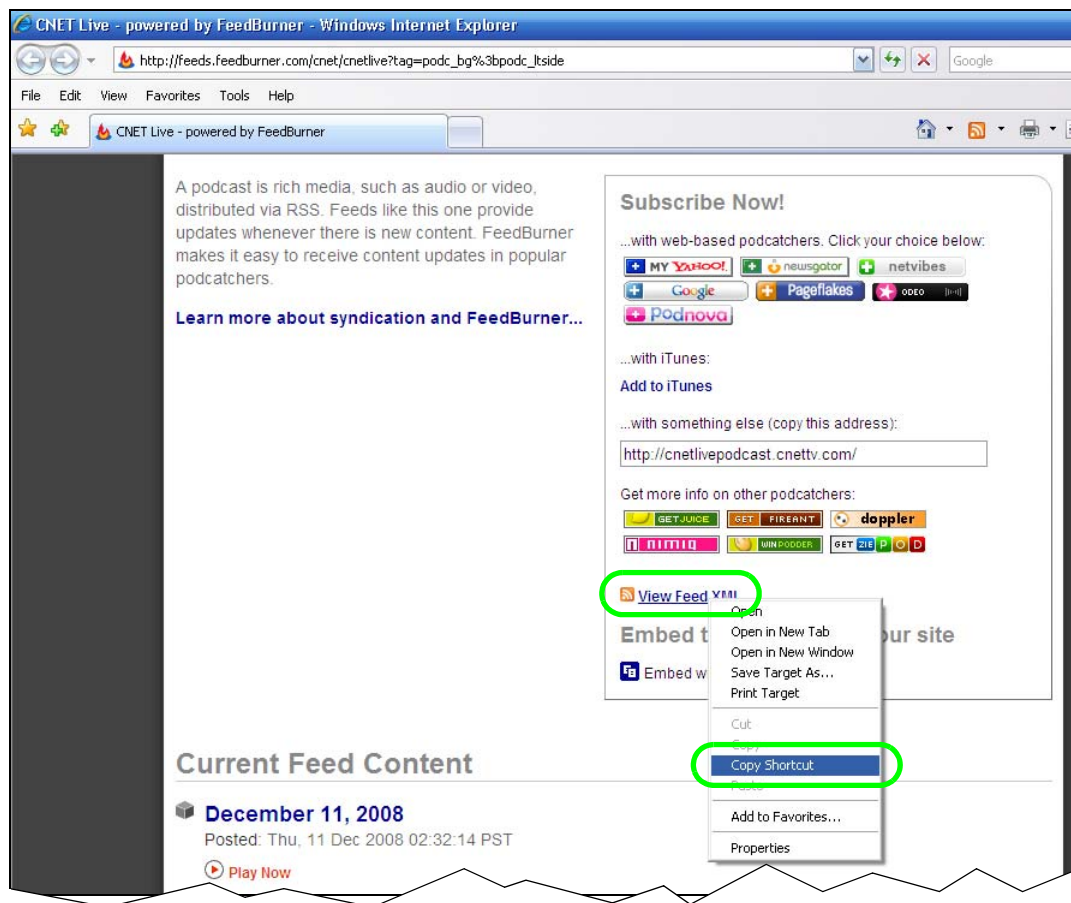
- 1 Open your Internet browser (this example uses Firefox).
- 2 Find the link for the RSS feed containing the channel you want to add. In this example, http://reviews.cnet.com/4520-11455_7-6333605-1.html has an **RSS** link for subscribing to the CNET Live podcast. However this is not the link for the actual RSS feed. Click the link to go to another screen that has RSS feed links.



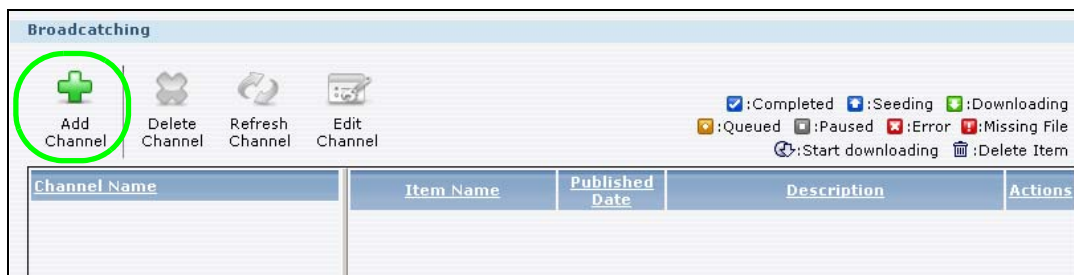
Note: Make sure the link goes to the actual RSS feed instead of to another list of links or information about the channel.

One way to test this is by clicking the link. Clicking an actual RSS feed link opens a screen of XML code (in browsers without an RSS feed aggregator) or a window where you can add the RSS feed (in browsers with an RSS feed aggregator).

- 3 Right-click the download link and select **Copy Link Location** in Firefox (or **Copy Shortcut** in Internet Explorer).



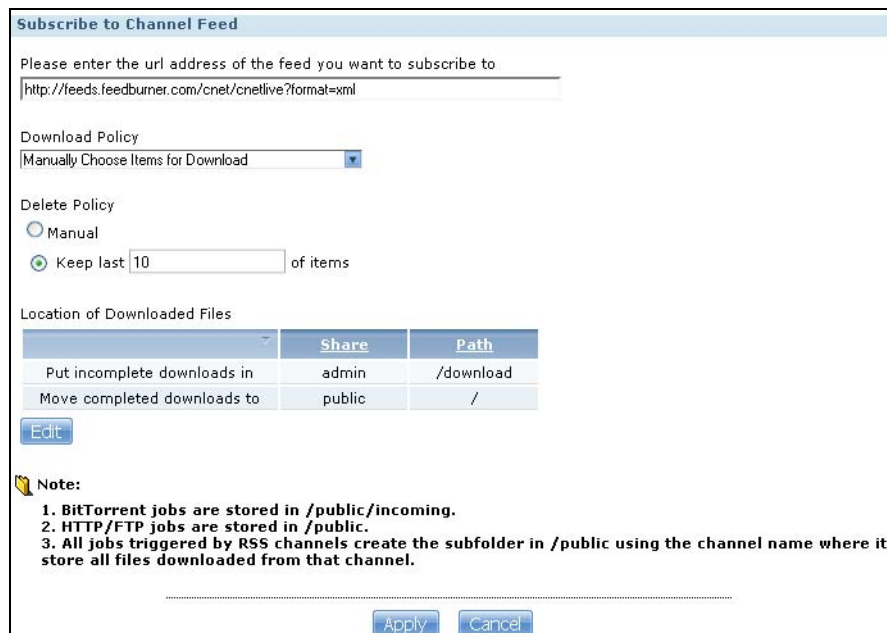
- 4 Log into the NSA web configurator (see [Section 3.3 on page 50](#)) using the administrator account and click **Administration > Applications > Broadcaching**.
- 5 Click **Add Channel**.



- 6 Right-click the URL field and select **Paste**.



- 7 The URL displays in the **URL** field.
- 8 Select a policy for what items to download. This example uses **Manually Choose Items for Download** so you will be able to select individual items to download later.
- 9 Select a policy for what items to delete. This example keeps the most recent 10 items.
- 10 Click **Apply**.

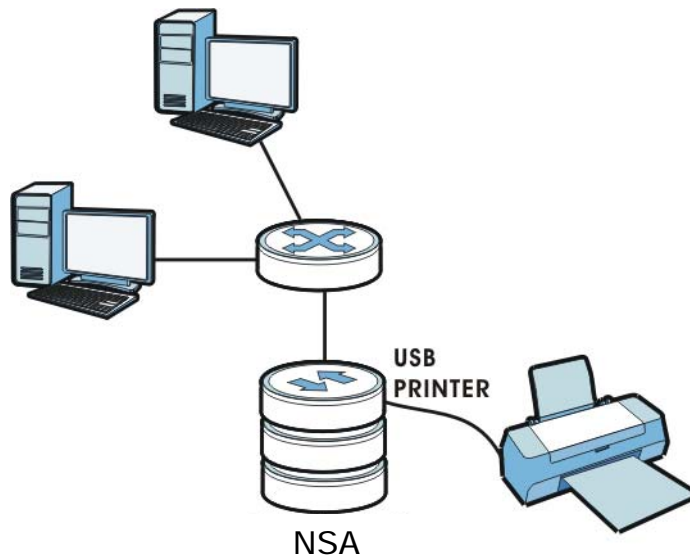


- 11 After a few moments, the channel appears in the **Broadcatching** screen where you can select items you want to download. The NSA saves the items you download in a folder named after the channel. By default, the channel folders are created in the **admin** share's **download** folder. The NSA's media server feature makes it easy for users on your network to play the broadcatching files you download. See [Section 9.11.1 on page 217](#) for more on the media server.

4.11 Printer Server Tutorial

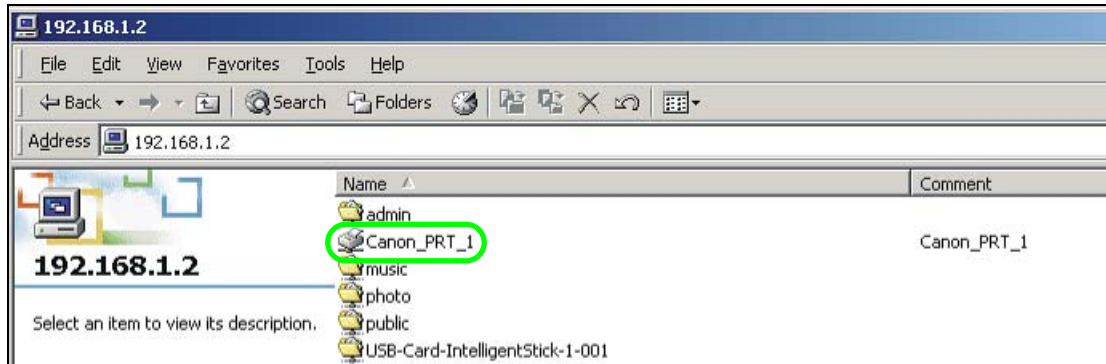
Do the following to have the NSA let computers on your network share a printer. See www.zyxel.com for a list of compatible printers.

- 1 Make sure the NSA is on and the **SYS** light is on steady (not blinking).
- 2 Use a USB cable to connect the printer's USB port to one of the NSA's USB ports. Make sure the printer is also connected to an appropriate power source.

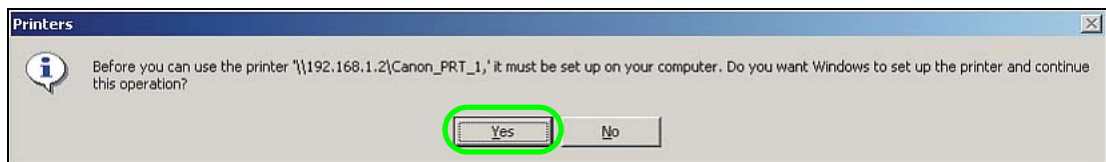


- 3 Turn on the printer.
- 4 The NSA detects the printer after a few moments.

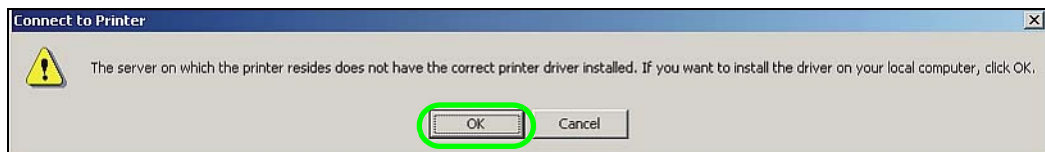
- 5 On your computer, open your CIFS file sharing program (Windows Explorer for example) and browse to the NSA. Double-click the printer's icon.



- 6 If you get a warning screen, click the option that lets you continue (**Yes** in this example).

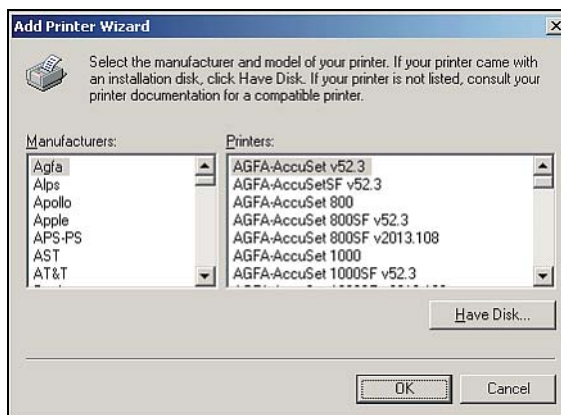


- 7 If your computer does not already have the printer's driver installed, you will need to install it. In this example, click **OK**.

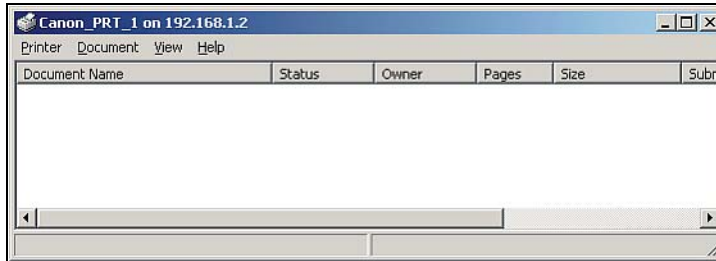


- 8 Use the wizard screens to install the printer driver on the computer. You may need to get the file from the printer's CD or the printer manufacturer's website (the driver is not installed on the NSA).

Note: You must install the printer driver on each computer that will use the printer.



After the driver installation finishes, the computer is ready to use the printer. Select the printer in an application to use it to print. Browse to the NSA using a CIFS program (like Windows Explorer) and double-click the printer's icon to open the printer's queue of print jobs.



Note: Repeat steps 5 to 8 on your other computers so they can also use the printer.

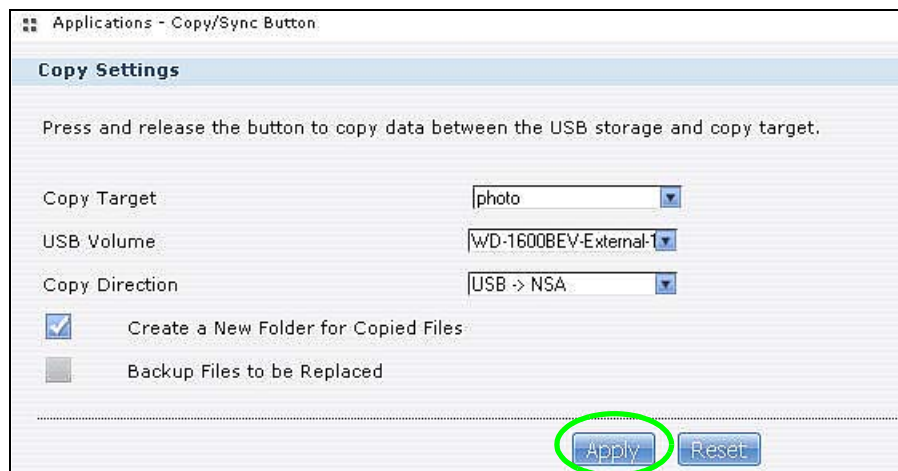
4.12 Copy and Flickr Auto Upload Tutorial

Amy received some photos taken during her best friend's wedding and saved the files on a USB disk. She wants to save a copy of the photos in the NSA and upload the photos to her Flickr account.

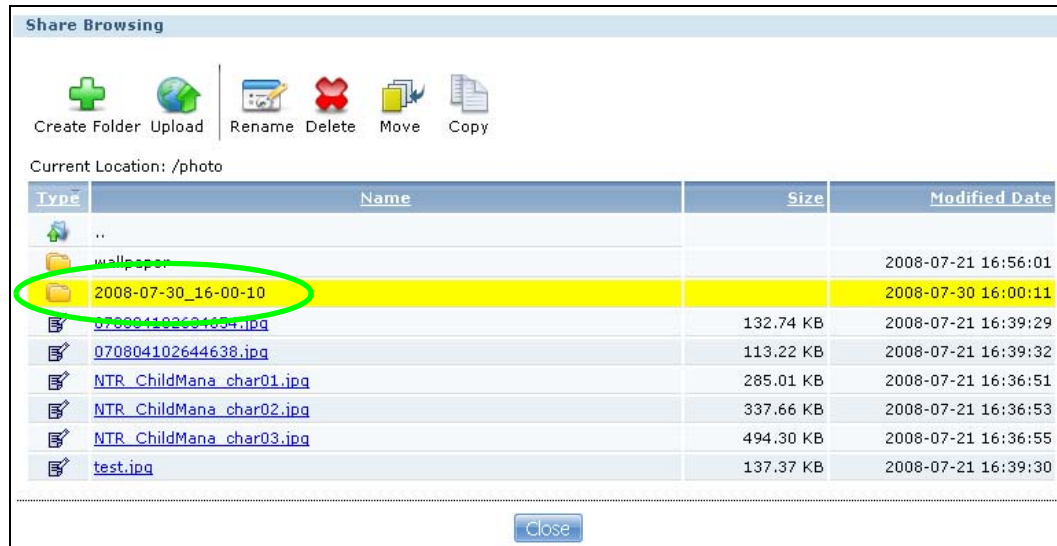
Amy has to activate the NSA's auto upload feature. See [Section 11.4 on page 286](#) for more details on setting up a Flickr account for auto upload. In this example Amy select the NSA's photo share for auto upload.

This is how Amy would transfer the files from her USB disk to the NSA.

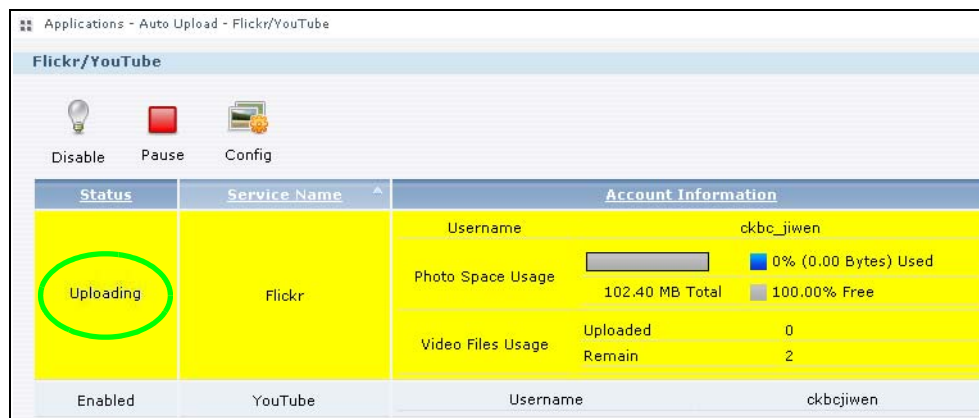
- 1 Click **Applications > Copy/Sync Button** in the navigation panel to open the screen.
- 2 Configure the copy settings as shown and click **Apply**.



- 3 Press and release the **COPY/SYNC** button on the NSA's front panel to start copying files.
- 4 The copied files can be found in a new folder in the photo share. The name of this folder is the date (yyyy-mm-dd) and time (hh-mm-ss) when the folder is created.



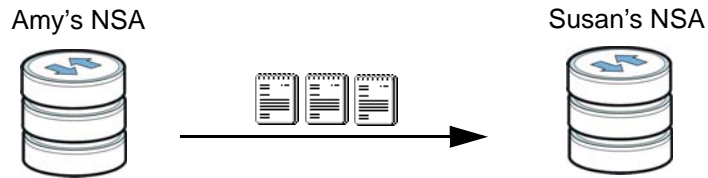
- 5 The NSA also automatically uploads the copied files to Flickr.



4.13 FTP Uploadr Tutorial

FTP Uploadr can automatically upload files saved on the NSA to a remote FTP server. Amy wants to share files on her NSA with Susan. They each have an NSA

at home, so Susan has to set her NSA as an FTP server for Amy to automatically send files using FTP Uploadr.



To set the NSA as an FTP server, click **Applications** > **FTP** to open the **FTP** screen. Select **Enable FTP** and click **Apply**.

FTP

Enable FTP

Connection Limit: 10 Connection Limit: 20

Idle Timeout: 15 minutes Max timeout: 300 minutes

Port Number: 21

Enable Anonymous FTP Access

Customize the port range for data transfer.

Note:
To configure a share to allow anonymous FTP access go to the configure shares page and modify a share's access rights to allow the user 'Anonymous FTP'.

Character Set

(UTF-8)

Apply Reset

Susan also has to create a user account and share on her NSA for Amy to upload files. The share is used for files uploaded from Amy's NSA. Amy will then use the following information to configure FTP Uploadr on her NSA.

Table 17 FTP Uploadr Tutorial: FTP Server Information

FTP Domain Name or IP Address	example2.com
FTP User Name	Amy
FTP Password	xxxxx
Share (Remote Path)	Amy

This is how Amy would set up the NSA's FTP Uploadr.

- 1 Click **Applications > Auto Upload > FTP Uploadr** to open the **FTP Uploadr** screen. Select **Enable FTP Uploadr** and click **Apply** to turn on FTP Uploadr.



- 2 Click **Add Server**.

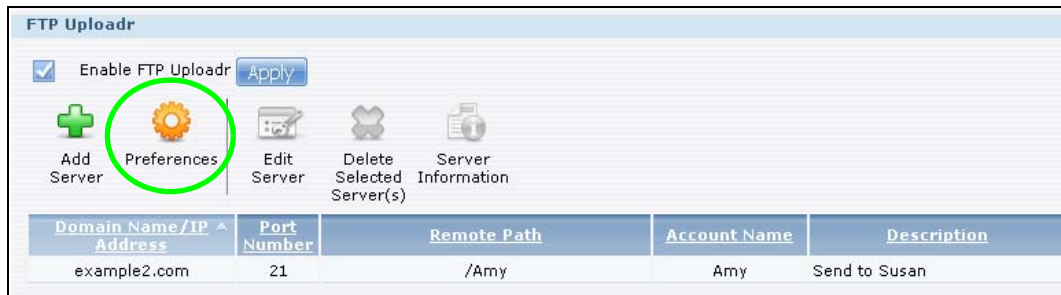


- 3 Enter the information as describe in [Table 17 on page 117](#). Click **Apply** to add the server.

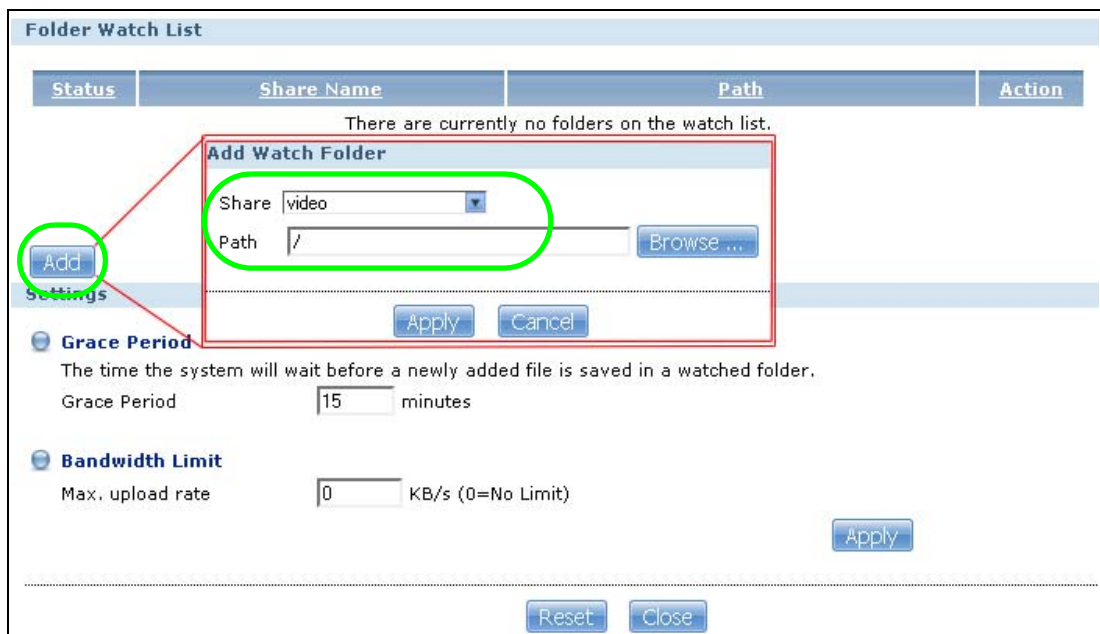
The 'Add Server' dialog box contains the following fields and controls:

- Domain Name/IP Address: example2.com
- Account Name: Amy
- Password: xxxxx
- Port Number: 21
- Remote Path: /Amy
- Description: Send to Susan
- A 'Test Connection' button is located below the description field.
- At the bottom of the dialog are 'Apply' and 'Cancel' buttons.

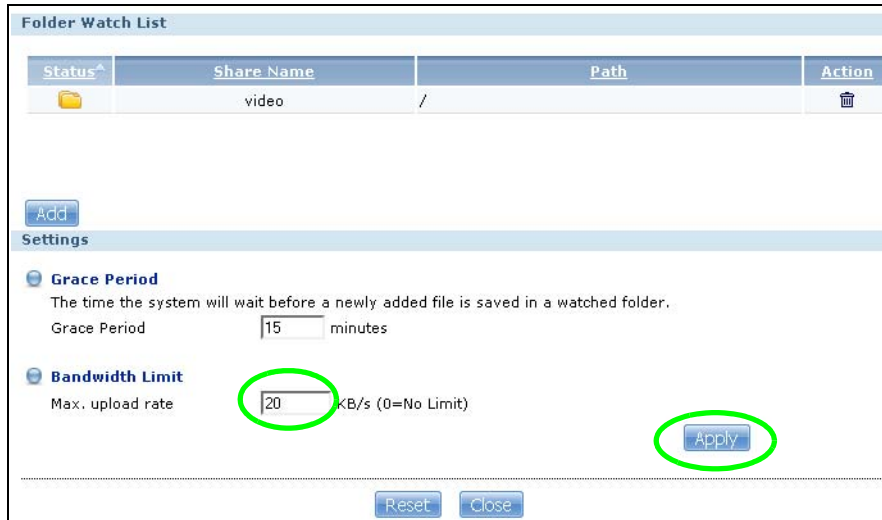
- 4 In the **FTP Uploadr** screen, click **Preferences** to configure the auto upload settings.



- 5 Amy wants to share video files with Susan. In the **Preferences** screen, click the **Add** button and select **video** from the **Shares** drop-down list box, enter a forward slash in the **Path** field and click **Apply** to add the share to the **Folder Watch List**.



- 6 Amy also set the **Bandwidth Limit** to 20KB/s so that the upload doesn't slow down her Internet connection.



The screenshot shows the 'Folder Watch List' settings window. At the top, there is a table with columns: Status, Share Name, Path, and Action. The first row shows a folder icon, 'video', '/', and a trash icon. Below the table is an 'Add' button. The 'Settings' section contains two main options: 'Grace Period' and 'Bandwidth Limit'. The 'Grace Period' is set to 15 minutes. The 'Bandwidth Limit' is set to 20 KB/s (0=No Limit). The 'Apply' button is circled in green, and the '20' in the bandwidth limit field is also circled in green. At the bottom, there are 'Reset' and 'Close' buttons.

Now Amy has set up FTP Uploadr to send files to Susan's NSA. Every time Amy adds new files or renames files in the **video** share, these new or modified files will be uploaded automatically to the **Amy** share on Susan's NSA.

Similarly, Susan can go through the steps described above to configure FTP Uploadr on her NSA. Once Susan completes the setup, Amy can also receive files from Susan's NSA.



4.14 Web Configurator's Security Sessions

These tutorials show you how to configure security for the NSA's Web Configurator sessions. You will customize the NSA's self-signed SSL certificate and distribute it to your users.

4.14.1 Customizing the NSA's Certificate

- 1 Click **Maintenance > SSL** and then select **Edit a self-signed CA certificate** and click **Edit**.

Maintenance - SSL

Force HTTPS (TLS/SSL) Connections

Caution:
Modifications of TLS/SSL certificate settings will restart network services.

Force HTTPS

Apply

Install System Default CA

This action will install the system default CA in the trusted CA list of your browser

Step1 Download the default CA file [Download](#)

Step2 Double click on the CA file to install it into your browser

Modify the Existing Certificate

Caution:
Modifications of TLS/SSL certificate settings will restart network services.

Edit a self-signed CA certificate

Step1 Edit the Self-signed Certificate [Edit](#)

Step2 Download the self-signed CA file [Download](#)

Step3 Double click on the CA file to install it into your browser

Create a Certificate To Be Authorized By My Own Certificate Authority

- Next, let's modify the certificate by changing the **Common Name** to this NSA's host name of "nsa", the **Organization** to "ZyXEL" and the **Key Length** to **2048**.

Edit the Self-signed Certificate

Common Name
 Host IP Address
 Host Domain Name nsa

Organizational Unit(Optional) Max length: 64 characters
Organization(Optional) ZyXEL Max length: 64 characters
Country(Optional) Country code only, such as TW, US, JP, etc,...

Key Type RSA
Key Length 2048

Note:
If you choose a large key length, it may take a while to make the certificate file.

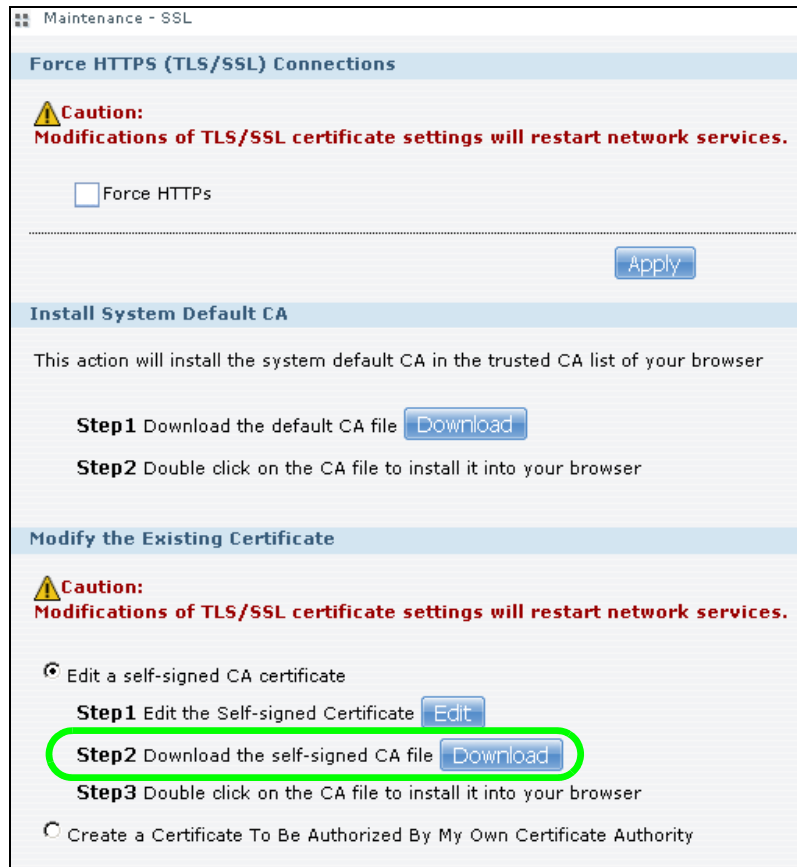
Apply Cancel

- The NSA restarts its network services and returns you to the login screen.

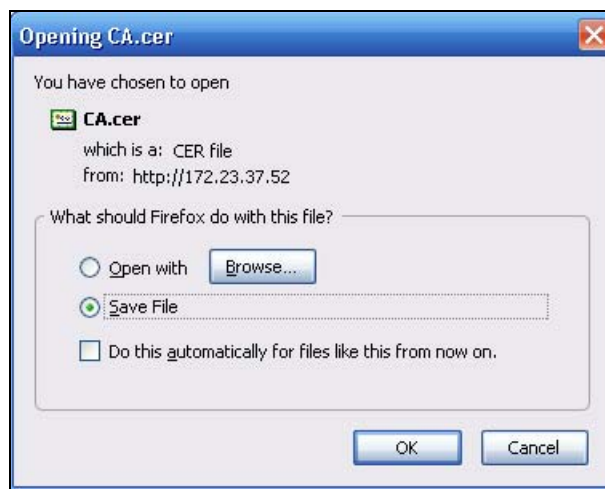


4.14.2 Downloading and Installing Customized Certificate

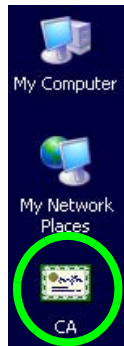
- 1 Log in and return to **Maintenance > SSL**. Under **Modify the Existing Certificate**, click **Download**.



- 2 Save the file to your computer.



- 3 Find the certificate file on your computer and double-click it.



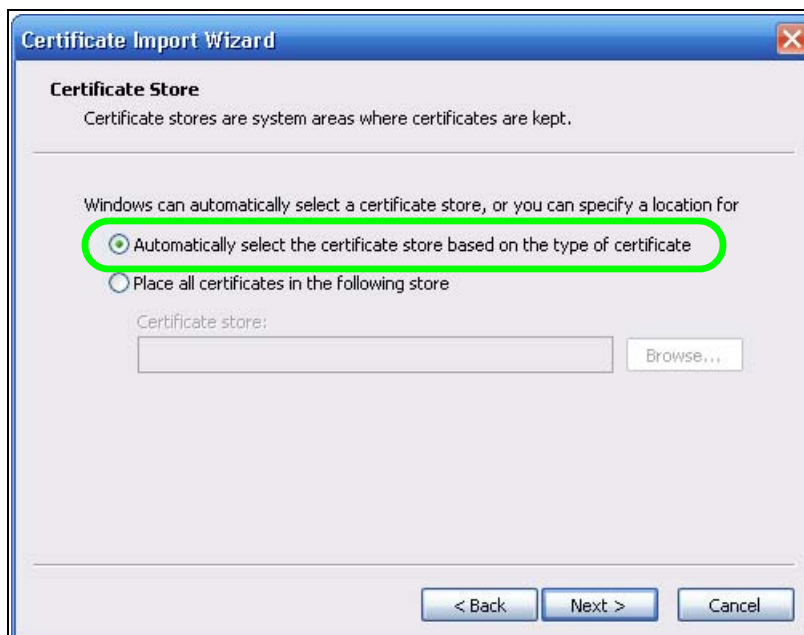
- 4 Install the certificate. The rest of the steps in this section are an example of installing a certificate in Windows. See [Appendix D on page 411](#) for other examples. In the **Certificate** dialog box, click **Install Certificate**.



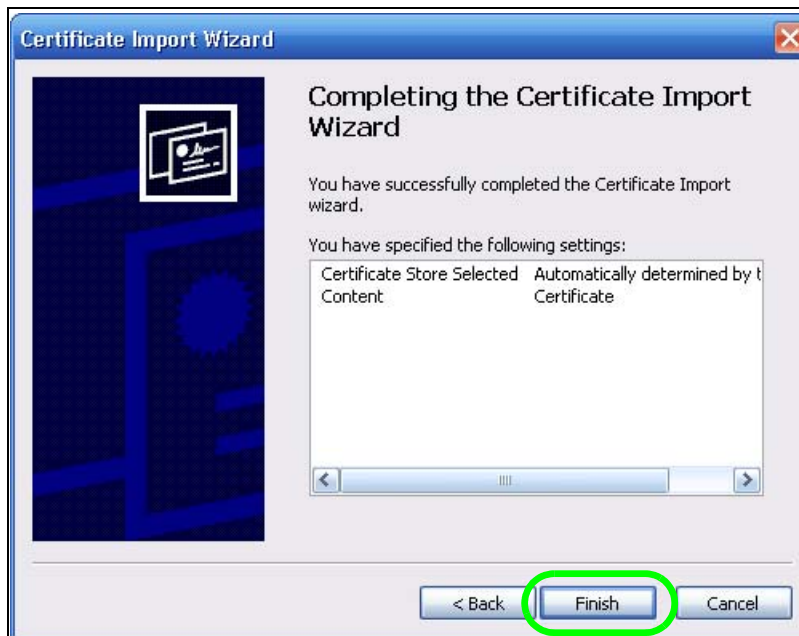
- 5 In the **Certificate Import Wizard**, click **Next**.



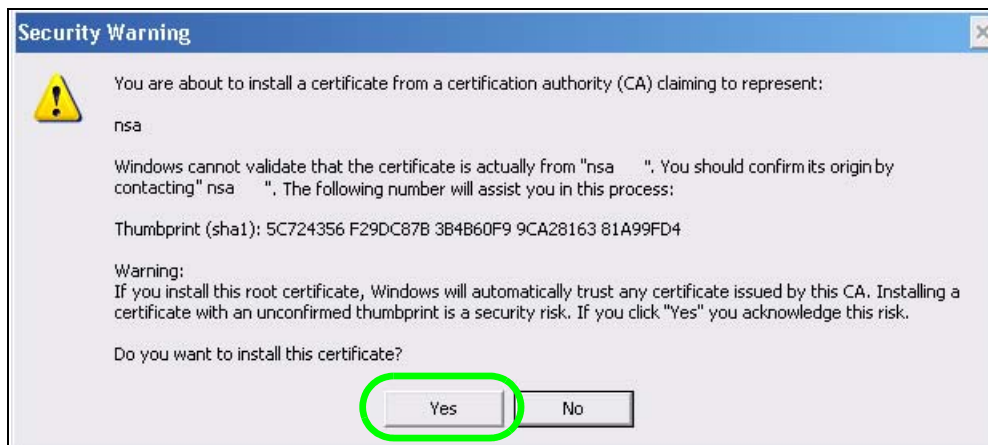
- 6 Leave **Automatically select certificate store based on the type of certificate** selected and click **Next**.



- 7 In the **Completing the Certificate Import Wizard** screen, click **Finish**.



- 8 If you are presented with another **Security Warning**, click **Yes**.



- 9 Finally, click **OK** when presented with the successful certificate installation message.



4.14.3 Turn on the NSA's Web Security

Now that you have customized the NSA's certificate and installed it in your computer, you can turn on security for your Web Configurator sessions. This example uses Firefox 3.0. See [Appendix D on page 411](#) for more information on browsers and certificates.

- 1 Close your web browser and open it again to reset its session with the NSA. Log in and click **Maintenance > SSL**. Select **Force HTTPS** and click **Apply**.

Maintenance - SSL

Force HTTPS (TLS/SSL) Connections

Caution:
Modifications of TLS/SSL certificate settings will restart network services.

Force HTTPS

Apply

Install System Default CA

This action will install the system default CA in the trusted CA list of your browser

Step1 Download the default CA file [Download](#)

Step2 Double click on the CA file to install it into your browser

Modify the Existing Certificate

Caution:
Modifications of TLS/SSL certificate settings will restart network services.

Edit a self-signed CA certificate

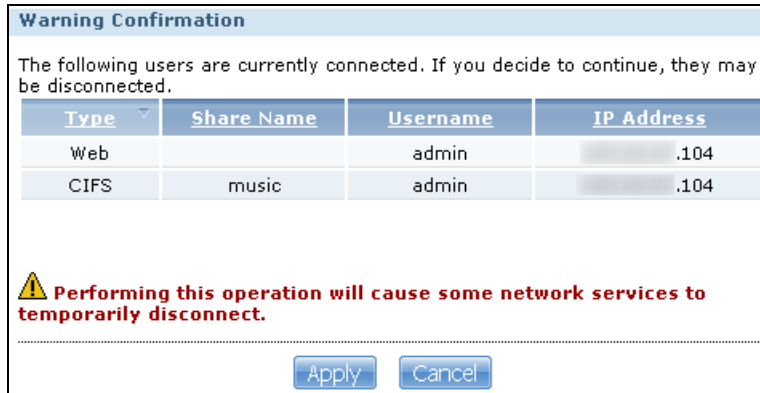
Step1 Edit the Self-signed Certificate [Edit](#)

Step2 Download the self-signed CA file [Download](#)

Step3 Double click on the CA file to install it into your browser

Create a Certificate To Be Authorized By My Own Certificate Authority

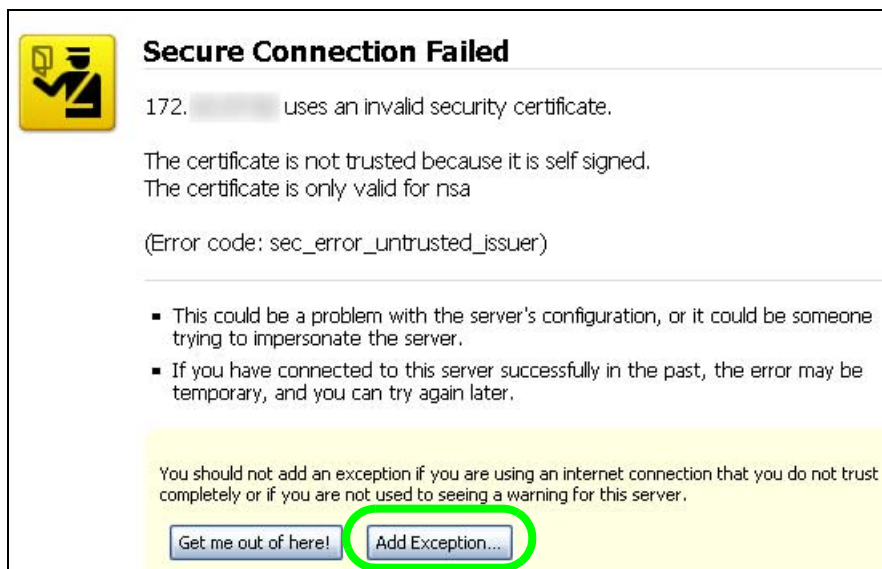
- 2 A warning screen pops up if applying your change may disconnect some users. Click **Apply** to continue.



- 3 The NSA logs you out and automatically redirects your formerly non-secure (HTTP) connection to a secure (HTTPS) connection. Your browser may give you a warning about the device's public key certificate. Add an exception to allow your browser to bypass the warning.



4 Click **Add Exception**.



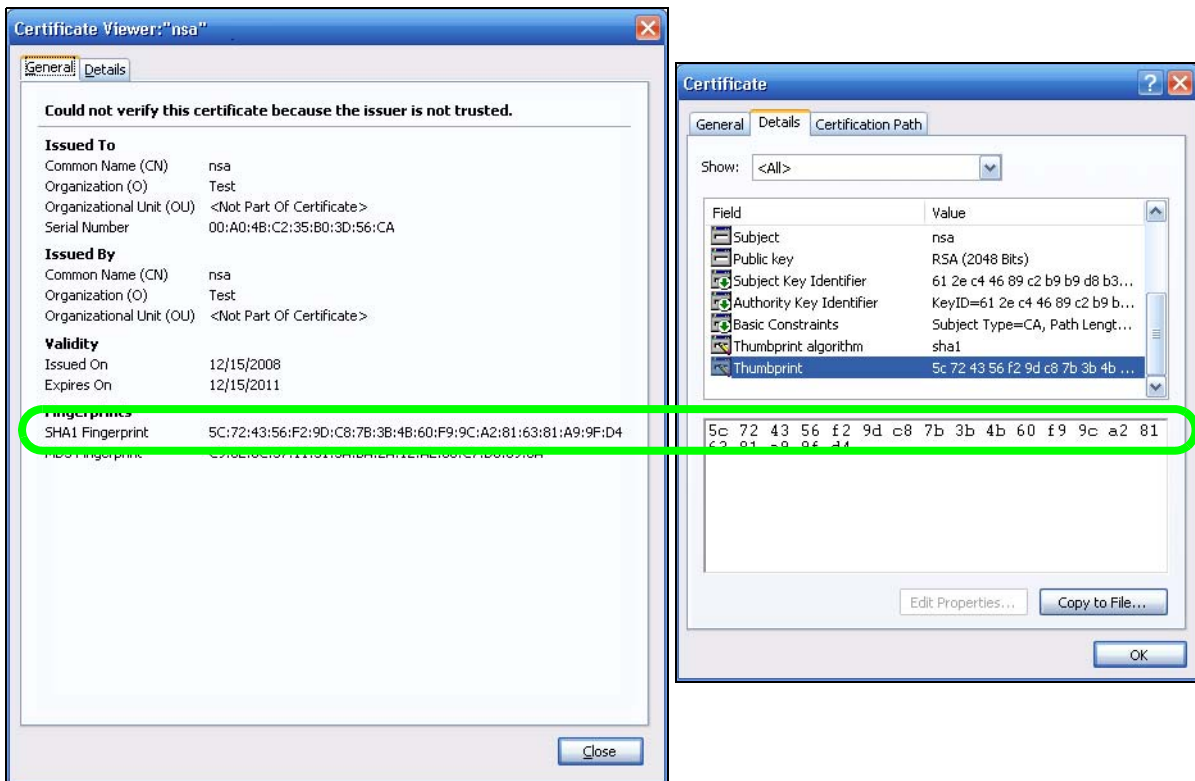
5 Click **Get Certificate**.



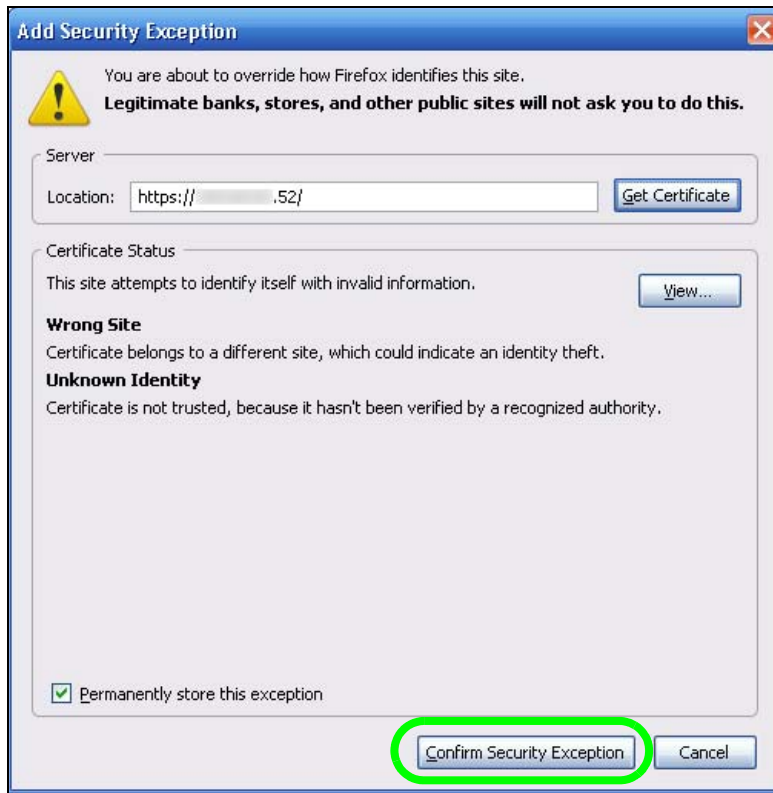
- 6 Before you add an exception, verify that the device to which you are trying to connect is providing the correct certificate. Click **View**.



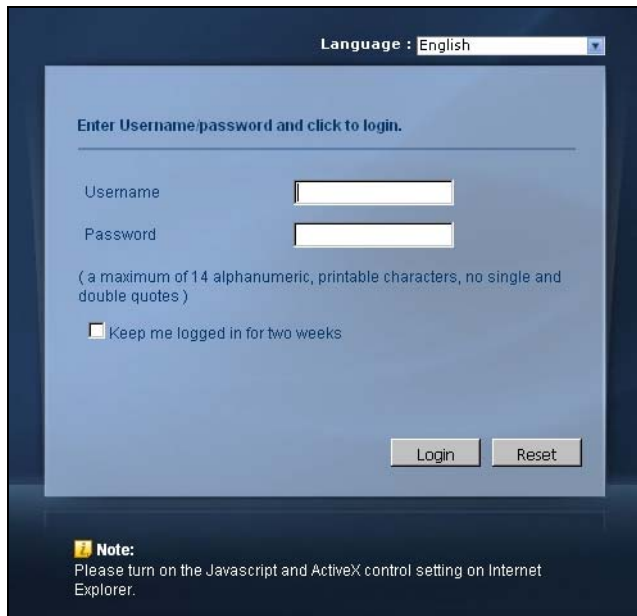
- The SHA1 fingerprint must match the NSA's certificate you downloaded from the NSA to your computer. (Double-click the NSA's certificate file and then click **Details** and look at the **Thumbprint**). Click **Close**.



- 8 If the certificate fingerprints match, click **Confirm Security Exception**, otherwise click **Cancel**.



- 9 The login screen displays.



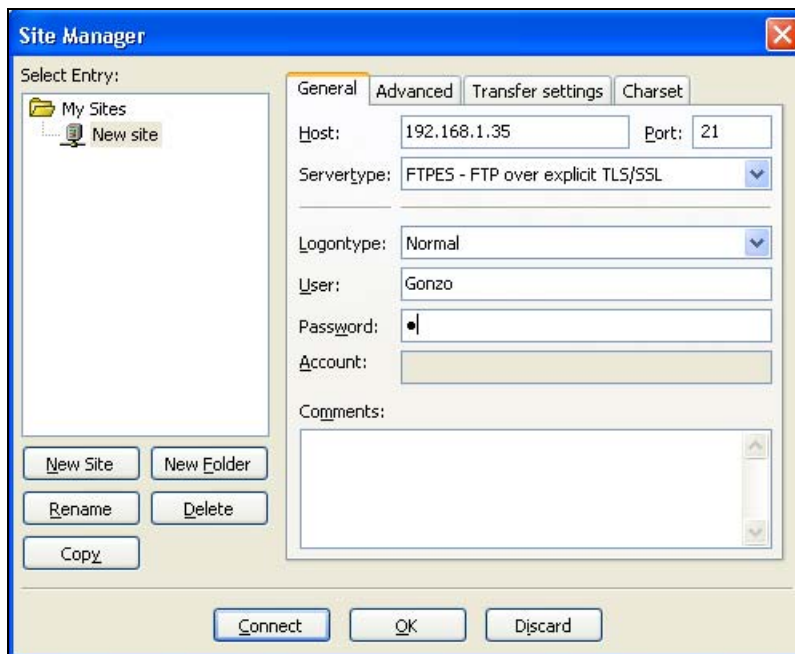
Now, anyone who connects to the NSA's Web Configurator screens will automatically do so by HTTPs. Use a secure method to let your users know the correct fingerprint for the NSA's certificate so they can check it before adding a

security exception (as in steps 6 to 7 on pages 130 to 131). See the next section for how to use FTPES with the NSA for secure FTP transfers.

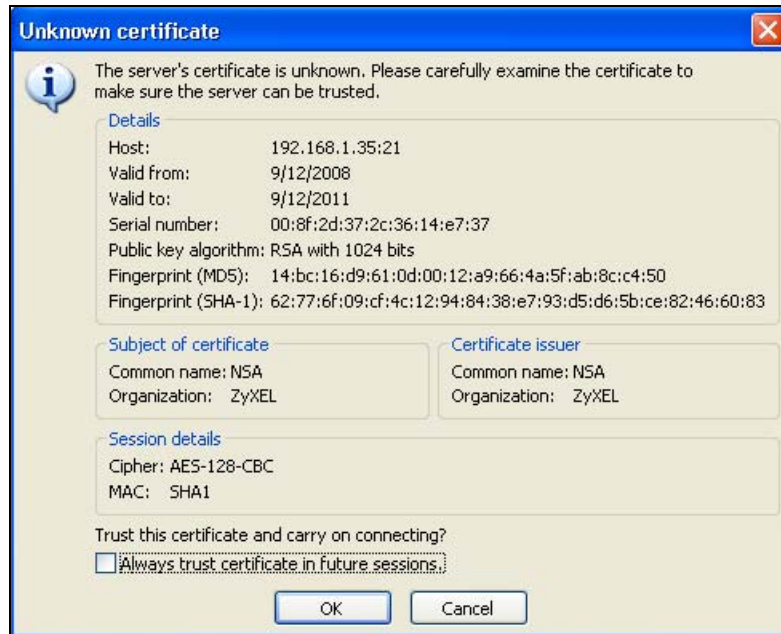
4.15 Using FTPES to Connect to the NSA

This section covers how to use FTP over Explicit TLS/SSL with the NSA for secure FTP transfers. Before you go through this section, read [Section 4.14 on page 121](#) to configure HTTPS. This example uses FileZilla.

- 1 Open FileZilla and click **File > Site Manager > New Site**.
 - Configure the **Host** field with the NSA's address.
 - Set the **Servertype** to **FTPES - FTP over explicit TLS/SSL**.
 - Configure the account name and password.
 - Click **Connect**.



- 2 A security warning screen displays. The SHA1 fingerprint must match the NSA's certificate you downloaded from the NSA to your computer. (Double-click the NSA's certificate file and then click **Details** and look at the **Thumbprint**). If they match, click **OK**.



The shares and folders to which Gonzo has access display. Now you can use FTP to securely transfer files to or from the NSA. Use a secure method to let your users know the correct fingerprint for the NSA's certificate so they can check it before adding a security exception.

4.16 How to Use the BackupPlanner

Note: The screens and links in this section appear only after you have installed and enabled BackupPlanner. BackupPlanner is an application that you can install using Package Management (see [Chapter 10 on page 231](#).)

Use the NSA's BackupPlanner to have a backup of your files and folders.

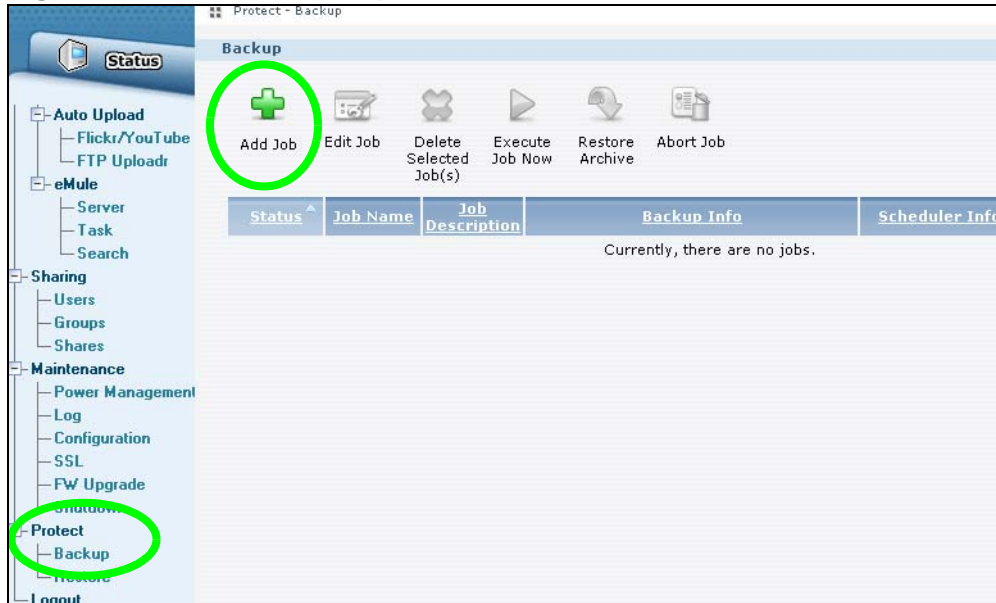
Schedule backups for times when the network is not busy (like at night or on weekends). For example, you might do daily backups of important individual files or folders and a weekly general archive. You can save backups to another location so your files can survive even if the original RAID or NSA fails.

4.16.1 Creating an Archive Backup

To backup the NSA every week to a remote NSA:

- 1 Click **Protect > Backup > Add Job**.

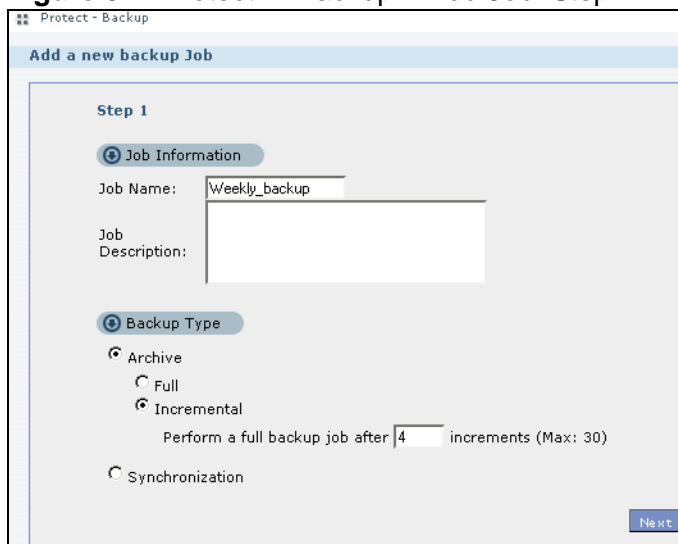
Figure 53 Protect > Backup



- 2 Identify the backup job and select **Archive**.

New files are often added to the shares that you need to back up and existing files are not frequently changed so select **Incremental**. The NSA does a full backup first and later only copies source files that are new and/or modified since the last backup. This example sets the NSA to do another full backup after every four incremental backups.

Figure 54 Protect > Backup > Add Job: Step 1

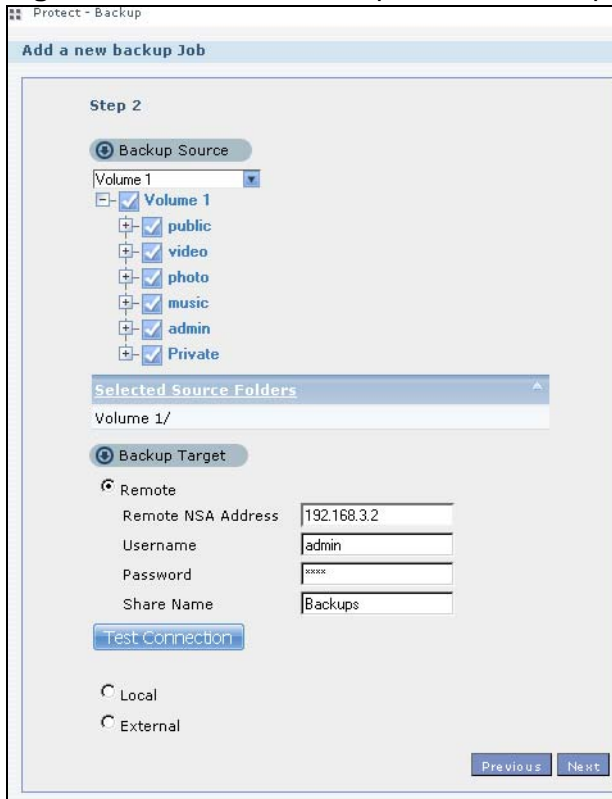


- 3 Select the **volume1** check box to select all the folders and files.

Select **Remote** and enter the other NSA's address, username, password, and share name.

If you want to make sure the remote NSA is reachable, click **Test Connection**.

Figure 55 Protect > Backup > Add Job: Step 2



- 4 In this example, the target NSA is on the LAN so leave the compression off. Security is already configured on the target NSA so you can leave the encryption off, too.

Have the NSA keep 3 backups.

Figure 56 Protect > Backup > Add Job: Step 3

Protect - Backup

Add a new backup Job

Step 3

Compression

Yes

No

Encryption

Yes

No

Purge Policy

Keep All Old Backup files

Keep Only the last 3 backup files(1-30)

Keep Backups For [] day(s)(1-3650)

Previous Next

- 5 Set the frequency to **Weekly**. Schedule the backup for 5:00 every Saturday morning.

Protect > Backup > Add Job: Step 4

Protect - Backup

Add a new backup Job

Step 4

Scheduler

Backup Frequency: Weekly

Start Time (hh:mm): 5:00

Every how many weeks? 1 (1-52)

on every Sunday Monday Tuesday Wednesday Thursday Friday Saturday

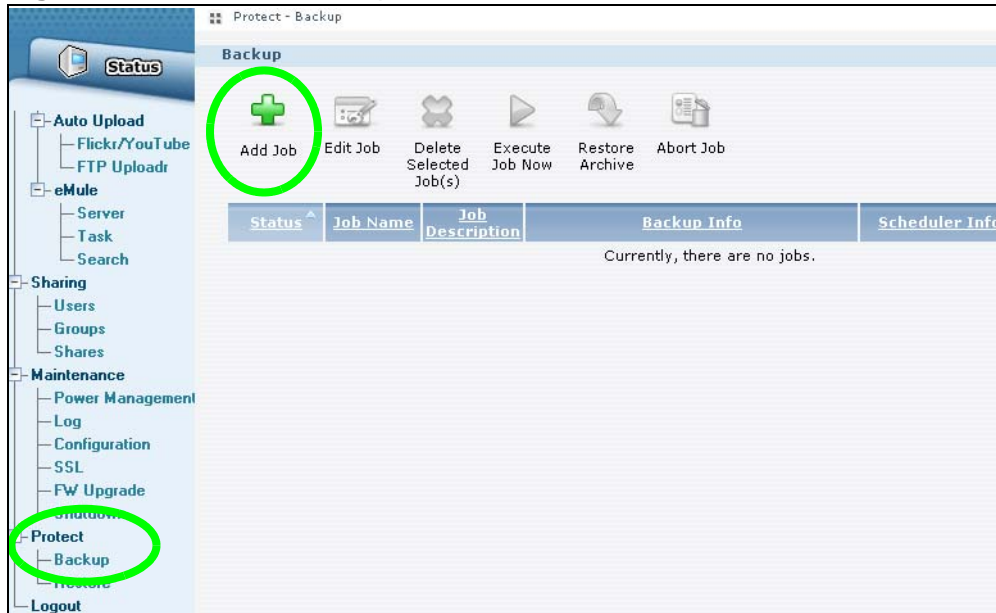
Previous Done

4.16.2 Creating a Synchronization Backup

To create a synchronization backup:

- 1 Click **Protect > Backup > Add Job**.

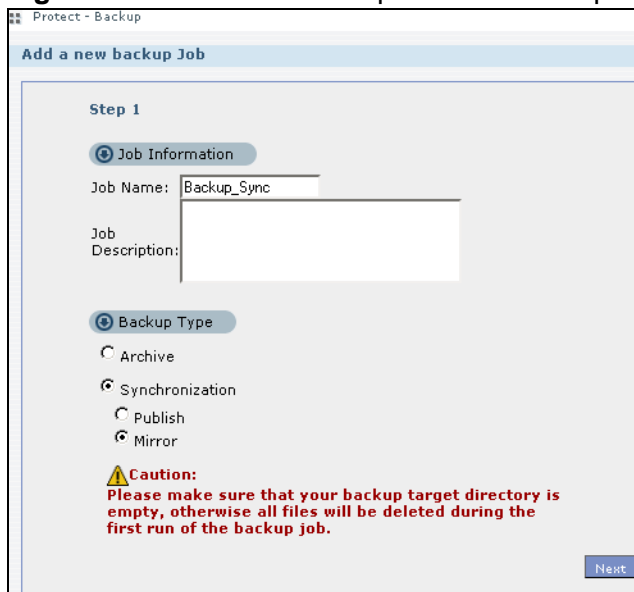
Figure 57 Protect > Backup



Name the backup job and select **Synchronization**.

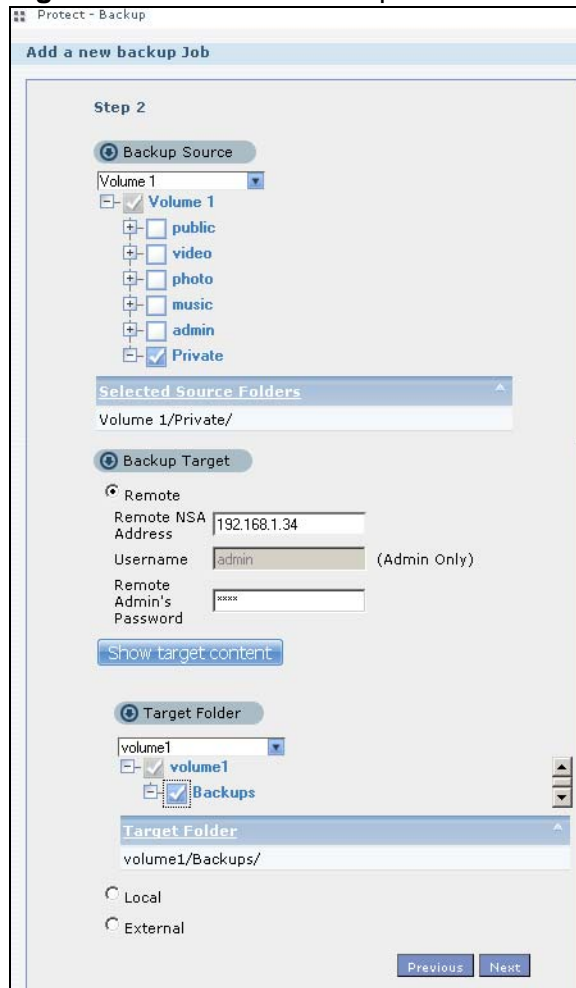
You want only your current set of files in the remote NSA's folder, so you select **Mirror** to make the target folder identical to the source folder. The NSA deletes any other files in the target folder.

Figure 58 Protect > Backup > Add Job: Step 1



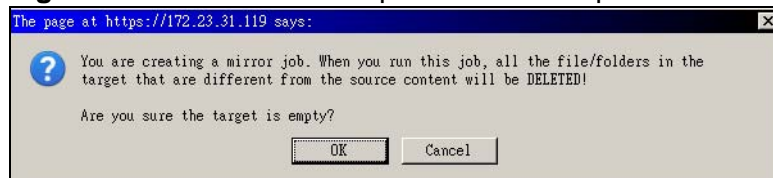
- 2 Select the folder that needs to be mirrored (your **Private** folder in this example) and **Remote**.
 - Enter the other NSA's address and administrator password.
 - Click **Show target content** to display the remote NSA's contents.
 - Select the destination on the remote NSA (**Backups** in this example).
 - Click **Next**.

Figure 59 Protect > Backup > Add Job: Step 2



- 3 Click **OK** in the warning dialog box.

Figure 60 Protect > Backup > Add Job: Step 3



- 4 For this example, assume the connection to the German branch office is a good one and not many files need to be backed up so leave the compression off.

- Turn on the encryption to protect these sensitive files during the transfer. The final files stored on the remote NSA will be unencrypted (usable).
- Restrict the bandwidth usage to 256 KB/s to stop the archives from using all of your network connection's available bandwidth.
- You don't have to configure a purge policy for a synchronization backup.
- Click **Next**.

Figure 61 Protect > Backup > Add Job: Step 3

Add a new backup Job

Step 3

Compression

Yes

No

Encryption

Use Encrypted Connection

Yes

No

Bandwidth

256 KB/s (0 : No Limit)

Purge Policy

Keep All Old Backup files

Keep Only the last backup files(1-30)

Keep Backups For day(s)(1-3650)

Previous Next

- 5 Schedule the backup to occur every morning at 3:00 and click **Done**.

Figure 62 Protect > Backup > Add Job: Step 4

Add a new backup Job

Step 4

Scheduler

Backup Frequency: Daily

Start Time (hh:mm): 3:00

Every how many days? 1

Previous Done

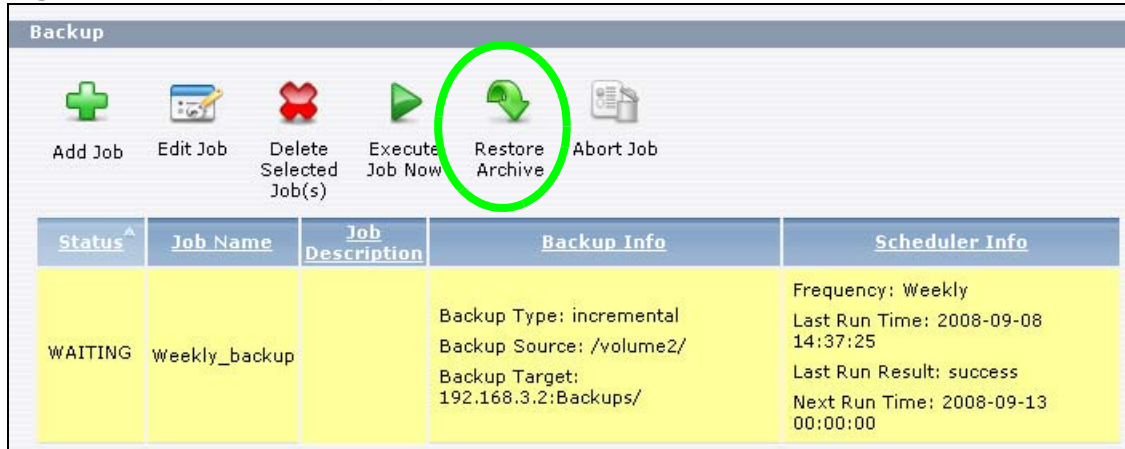
You do not need to use a special restore process to use the files a synchronization backup creates. The copy of files that the NSA creates on the other NSA's Backups share can be used directly by anyone with access to that share.

4.16.3 Restoring Archived Files by Backup Job

If you have backup jobs for which the NSA has already performed backups, you can restore the files based on the backup job. Do the following:

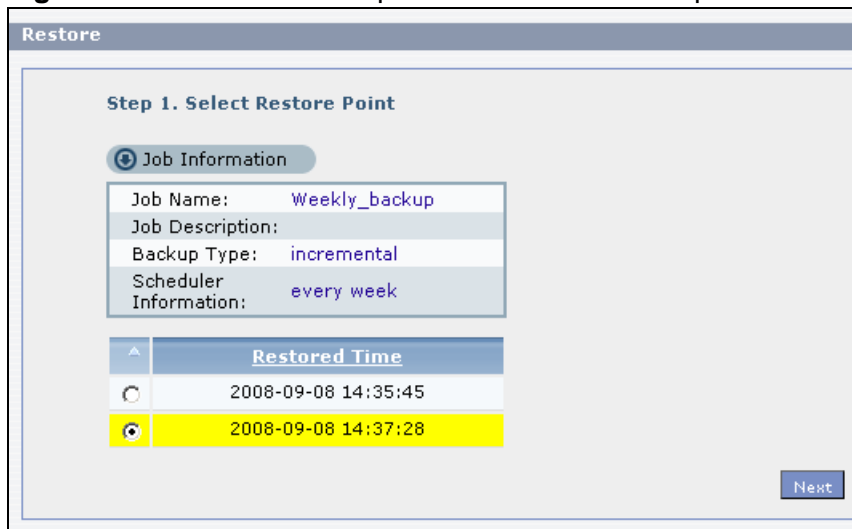
- 1 Click **Protect > Backup** screen, select a backup job and click **Restore Archive**.

Figure 63 Protect > Backup



- 2 Select which backup to use and click **Next**.

Figure 64 Protect > Backup > Restore Archive: Step 1



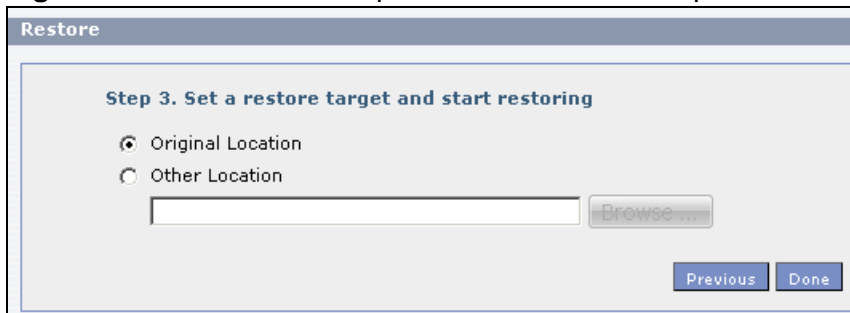
- 3 Select the files and folders you want to restore and click **Next**.

Figure 65 Protect > Backup > Restore Archive: Step 2



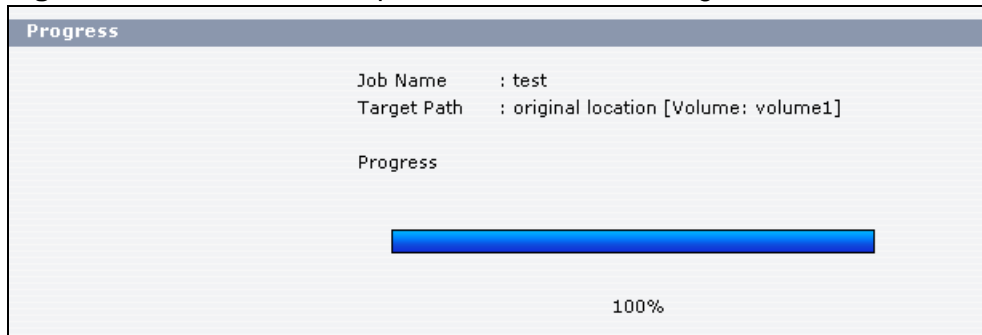
- 4 Select the original location and click **Done**.

Figure 66 Protect > Backup > Restore Archive: Step 3



- The NSA restores the files into the share. When it finishes you can access the files.

Figure 67 Protect > Backup > Restore Archive: Progress

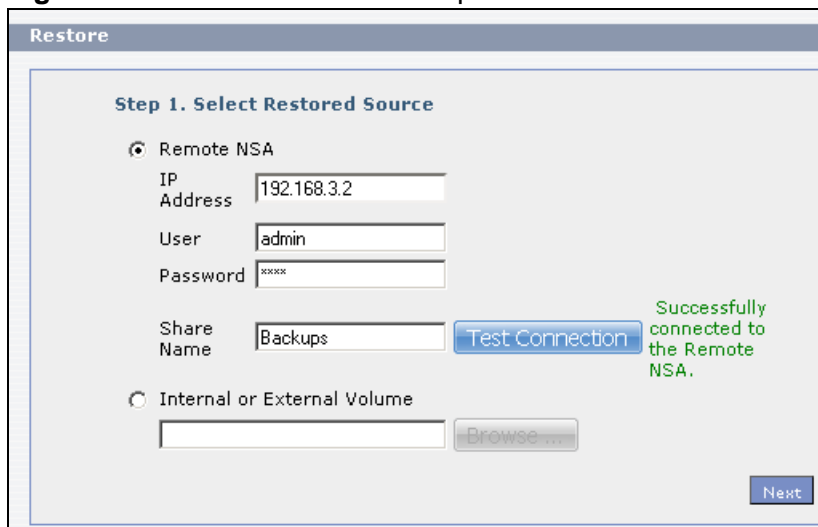


4.16.4 Restoring by Backup Files

If you deleted an archive backup job or the NSA or the RAID array containing the backup job failed you cannot restore archived files by the backup job. In this example, the NSA's RAID array failed. You've replaced the hard drives and re-configured the RAID. To restore by backup files:

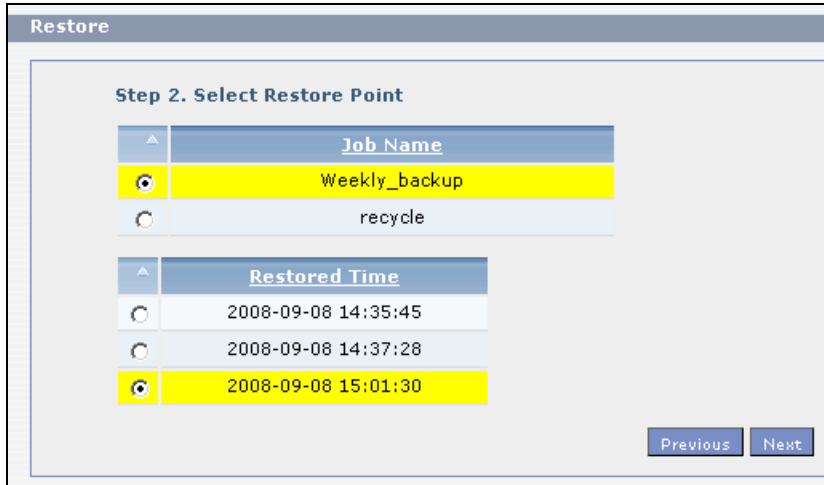
- Click **Protect > Restore**. Specify where the archive files are located. In this example, enter "192.168.3.2" as the IP address, "admin" as the account name, "1234" as the password, and "Backups" as the share name. Click **Test Connection**. Click **Next**.

Figure 68 Protect > Restore: Step 1



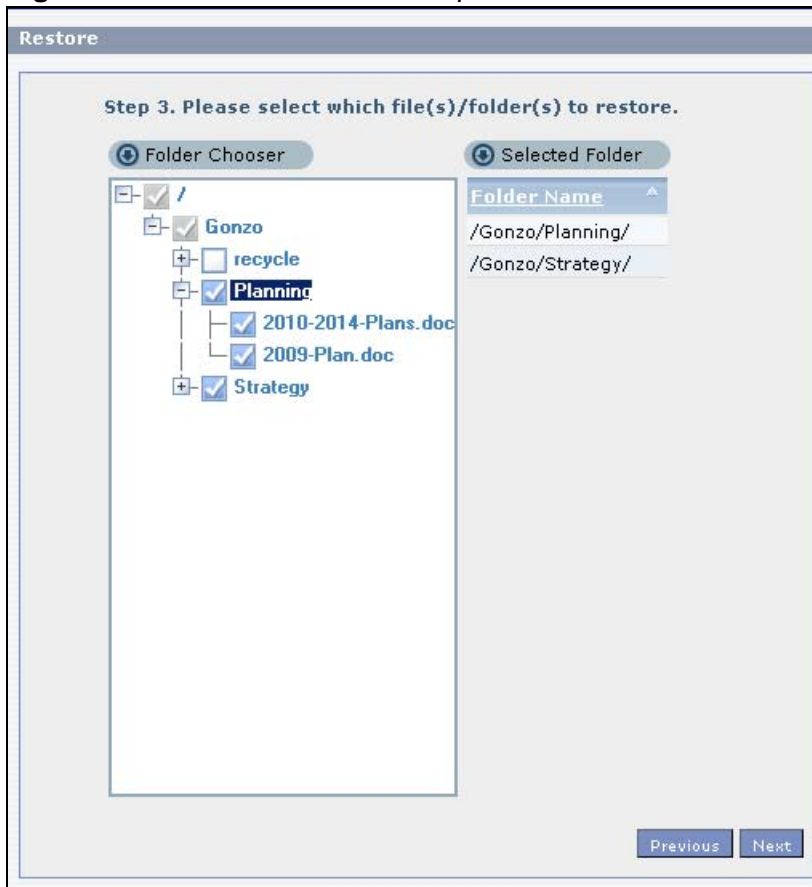
- 2 Select the backup job and backup time and click **Next**.

Figure 69 Protect > Restore: Step 2



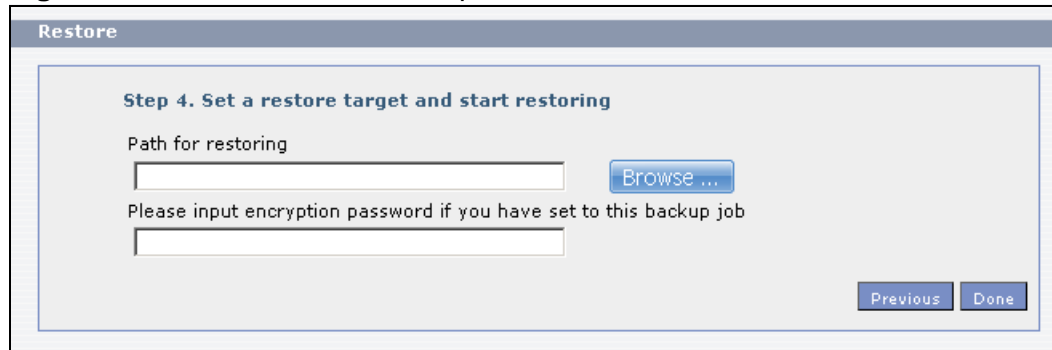
- 3 Select everything in the share except the recycle folder. Click **Next**.

Figure 70 Protect > Restore: Step 3



- 4 Browse to the folder where you want to put the files. Click **Done**.

Figure 71 Protect > Restore: Step 4



The screenshot shows a dialog box titled "Restore". Inside, there is a section titled "Step 4. Set a restore target and start restoring". Below this title, there is a label "Path for restoring" followed by a text input field and a "Browse ..." button. Below the input field, there is a label "Please input encryption password if you have set to this backup job" followed by another text input field. At the bottom right of the dialog, there are two buttons: "Previous" and "Done".

- 5 The NSA restores the files and you can use them again.

PART II

Technical Reference

Status Screen

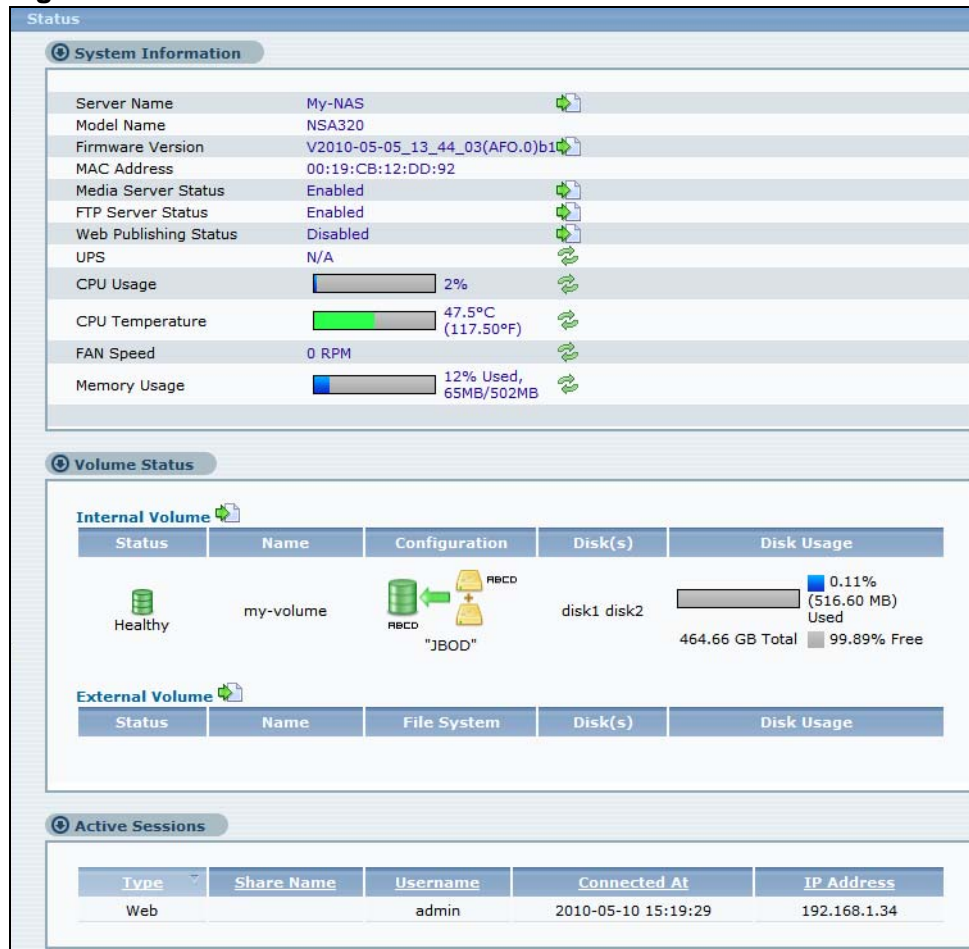
5.1 Overview

This chapter describes the **Status** screen, which is the first advanced administration screen that displays.

5.2 The Status Screen

Click **Administration** in the **Home** screens ([Section 3.5 on page 66](#)) to open the Web Configurator. You can also view the status screen, by clicking **Status** on the top-left of the navigation panel.

Figure 72 Status



The following table describes the labels in this screen.

Table 18 Status

LABEL	DESCRIPTION
Status	Click this to refresh the status screen statistics.
System Information	
Server Name	This displays the name which helps you find the NSA on the network. Click the Edit icon to go to the screen where you can configure this.
Model Name	This displays which model this NSA device is.
Firmware Version	This is the NSA firmware version. Click the Edit icon to go to the Maintenance > FW Upgrade screen from which you can upload/upgrade new firmware.
MAC Address	This displays the NSA's unique physical hardware address (MAC). You need the MAC address to register the product at myZyXEL.com. Customer support may also request it for troubleshooting purposes.

Table 18 Status (continued)

LABEL	DESCRIPTION
Media Server Status	This shows whether the media server function is enabled or disabled. It must be enabled for media clients to play content files stored on the NSA. Click the Edit icon to go to the screen where you can configure this.
FTP Server Status	This shows whether the FTP server function is enabled or disabled. It must be enabled to use FTP file transfer to/from the NSA. Click the edit icon to go to the screen where you can configure this.
Web Publishing Status	This shows whether the Web server function is enabled or disabled. It must be enabled to use HTTP to access shares on the NSA. Click the Edit icon to go to the screen where you can configure this.
UPS	This shows the Uninterruptible Power Supply (UPS) capacity. Click the Edit icon to go to the screen where you can configure this.
CPU Usage	<p>This displays a summary of CPU usage by all current processes.</p> <p>Click the Refresh icon to update this display. It also automatically updates itself every 10 seconds.</p> <p>Note: If too many users are using the NSA then the NSA may appear sluggish.</p>
CPU Temperature	<p>This displays the current temperature near the NSA's CPU. The NSA generates an emergency log if the temperature goes out of the normal operating range. If the temperature goes even higher, the NSA shuts down automatically to avoid damage from overheating. If the NSA overheats, make sure the fans are working and it is in a well ventilated place.</p> <p>Click the Refresh icon to update this display. It also automatically updates itself every 60 seconds.</p>
Fan Speed	<p>This is the RPM (Rotations Per Minute) of the NSA's fans.</p> <p>Click the Refresh icon to update this display. It also automatically updates itself every 60 seconds.</p>
Memory Usage	<p>This shows how much of the NSA's total memory is being used.</p> <p>Click the Refresh icon to update this display. It also automatically updates itself every 10 seconds.</p>
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	<p>This displays the volumes created on the hard drives installed in the NSA.</p> <p>Click the Edit icon to open the Storage screen. You can create and edit the NSA's internal volume. See Chapter 7 on page 159 for more details.</p>

Table 18 Status (continued)

LABEL	DESCRIPTION
External Volume	<p>This displays the volumes created on USB hard drives connected to the NSA. USB disks are numbered in the order that you insert USB devices.</p> <p>Click the Edit icon to open the Storage screen. You can create and edit the external volume. See Chapter 7 on page 159 for more details.</p>
Status	This icon indicates whether the volume is healthy, degraded, or down.
Name	This field shows the name for the volume.
Configuration	This field (also known as Type) shows what type of data storage system (a RAID type or JBOD) an internal volume is using.
File System	This field shows what file system an external (USB) volume is using.
Disk(s)	For internal drives, this shows which hard drive bays are included in the volume. For external drives, this field shows front USB for the front USB port and rear USB1 and rear USB2 for the rear USB ports.
Disk Usage	This field shows total disk size, the percentage of the disk being used and the percentage that is available.
Active Sessions	This shows how many users are currently connected to the NSA.
Type	This shows whether it's a Windows/CIFS, web (web configurator), 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 and web sessions.
Username	This displays the name of the user connected to the NSA if one is defined. ANONYMOUS FTP displays if a username is not defined for the user's connection.
Connected At	This displays the date and time the user last connected to the NSA in year, month, day, hour, minute, second format.
IP Address	This displays the IP address of the computer connected to the NSA.

System Setting

6.1 Overview

This chapter gives an overview of the various features included in the system setting screens. You can identify your NSA on the network and set the time that the NSA follows for its scheduled tasks/logs.

6.2 What You Can Do

- Use the **Server Name** screen ([Section 6.4 on page 154](#)) to specify the NSA's server and workgroup names.
- Use the **Date/Time** screen ([Section 6.5 on page 155](#)) to set up date/time and choose a time zone for the NSA.

6.3 What You Need to Know

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 is included by default in Windows operating systems.
- You can use Samba with Linux to use CIFS.
- CIFS transfers use security.

Time Lag

Time lag occurs when the time on the NSA falls behind the time on the time server. This may happen if:

- the time server is no longer reachable
- if the NSA is shut down often (the NSA internal battery keeps time when the NSA is shut down and this may cause possible variance)

- power surges occur.

The NSA gives no warning if time lag occurs. You should resynchronize the time after a power surge or after you have shut down the NSA several times.

6.4 The Server Name Screen

Click **System Setting** > **Server Name** to open the following screen. Use this screen to configure your CIFS settings. In this screen you can set your server name and specify if your NSA is a part of a workgroup.

Note: CIFS cannot be disabled on the NSA.

Figure 73 System Setting > Server Name

The following table describes the labels in these screens.

Table 19 System Setting > Server Name

LABEL	DESCRIPTION
Server Name	Enter a name to identify your NSA on the network in this field. You can enter up to 15 alphanumeric characters with minus signs allowed but not as the last character. The name must begin with an alphabet (a-z) and is NOT case sensitive.
Description	Add text here to describe the NSA if the Server Name field is not enough. Use up to 61 characters. You can use all characters except the following: \/: []<>+;=?*"~.
Workgroup Name	Type your workgroup name in this field. A workgroup is a group of computers on a network that can share files. These user accounts are maintained on the NSA. You can enter up to 15 alphanumeric characters with minus signs allowed but not as the last character. The name must begin with an alphabet (a-z) and is NOT case sensitive.
Prevent NSA From Being Master Browser	Select this option if computers in your workgroup are named with non-English characters (such as Chinese and Russian). When you perform a search in the workgroup, this option allows you to locate computers named with non-English characters.

Table 19 System Setting > Server Name (continued)

LABEL	DESCRIPTION
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

6.5 The Date/Time Screen

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

Click the **System Setting** link in the navigation panel and then click the **Date/Time** link to access the **Date/Time** screen.

Figure 74 System Setting > Date/Time

The following table describes the labels in this screen.

Table 20 System Setting > Date/Time

LABEL	DESCRIPTION
Current System Date Time Setting	
Current Time	This field displays the time used by your NSA for its logs and alerts.
Current Date	This field displays the date used by your NSA for its logs and alerts.
Date Time Setup	

Table 20 System Setting > Date/Time (continued)

LABEL	DESCRIPTION
Manual	<p>Select this radio button to enter the time and date manually.</p> <p>When you enter the time settings manually, the NSA uses the new setting once you click Apply.</p> <p>Note: If you enter time settings manually, they revert to their defaults when power is lost.</p>
New Date (yyyy-mm-dd)	<p>This field displays the last updated date from the time server or the last date configured manually.</p> <p>When you set Time and Date Setup to Manual, enter the new date in this field and then click Apply.</p>
New Time (hh:mm:ss)	<p>This field displays the last updated time from the time server or the last time configured manually.</p> <p>When you set Time and Date Setup to Manual, enter the new time in this field and then click Apply.</p>
Get from Time Server	<p>Select this check box to have the NSA get the time and date from the time server you select in the Time Server Address field.</p>
Time Server Address	<p>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.</p>
Synchronize Now	<p>Click this for the NSA to retrieve the correct time from the configured time server right away.</p>
Time Zone	
Time Zone	<p>Choose the time zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT).</p>
Manual Daylight Saving	<p>Daylight saving is a period from late spring to fall when many countries set their clocks ahead of normal local time by one hour to give more daytime light in the evening.</p> <p>Select this option to manually enter Daylight Saving Time settings. Clear this option to have the NSA automatically retrieve Daylight Saving Time settings from the Internet. The NSA will download a new daylight saving resource file from the Internet every month.</p>

Table 20 System Setting > Date/Time (continued)

LABEL	DESCRIPTION
Start Date	<p>Configure the day and time when Daylight Saving Time starts if you selected Enable Daylight Saving. The hour field uses the 24 hour format. Here are a couple of examples:</p> <p>Daylight Saving Time starts in most parts of the United States on the second Sunday of March. Each time zone in the United States starts using Daylight Saving Time at 2 A.M. local time. So in the United States you would use March, Second, Sunday, at 2:00.</p> <p>Daylight Saving Time starts in the European Union on the last Sunday of March. All of the time zones in the European Union start using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select March, Last, Sunday. The time you specify depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+1).</p>
End Date	<p>Configure the day and time when Daylight Saving Time ends if you selected Enable Daylight Saving. The o'clock field uses the 24 hour format. Here are a couple of examples:</p> <p>Daylight Saving Time ends in the United States on the first Sunday of November. Each time zone in the United States stops using Daylight Saving Time at 2 A.M. local time. So in the United States you would select November, First, Sunday, at 2:00.</p> <p>Daylight Saving Time ends in the European Union on the last Sunday of October. All of the time zones in the European Union stop using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select October, Last, Sunday. The time you specify depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+1).</p>
Offset	Specify by how many hours to change the time for Daylight Saving Time.
Apply	Click this to save your changes. If you configured a new time and date, Time Zone and Daylight Saving at the same time, all of the settings take affect.
Cancel	Click this to restore your previously saved settings.

Storage

7.1 Overview

Several NSA features require a valid internal volume. This chapter covers the management of volumes and disks (both internal and external).

Use the **Storage** screen ([Section 7.2 on page 160](#)) to display information on all volumes, create internal and external volumes, and configure the volume's properties.

7.1.1 What You Need to Know About Storage

Volume

A volume is a storage area on a disk or disks. You can create volumes on the internal disks and external disks attached to the USB port(s). You can spread a volume across internal disks but not between internal and external disks.

Storage Methods

RAID (Redundant Array of Independent Disks) or JBOD (Just a Bunch of Data) is the storage method that the NSA uses. The storage method you use depends on how many disks you have and how many volumes you want to create. It's important that you consider this carefully as all data is deleted when you re-create a volume. See [Figure 7.6.2 on page 169](#) for details on choosing a storage method.

Finding Out More

See [Section 7.6 on page 168](#) for more technical background information on storage.

7.2 The Storage Screen

The **Storage** screen allows you to create and edit volumes in the NSA.

7.2.1 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 the replacement disk is of a higher capacity, the extra space on the disk will not be used except if it is for a RAID 1 volume and you follow the [Expanding a RAID 1 Volume](#) procedure.

Note: The NSA automatically repairs a degraded RAID volume if you insert an empty disk without an existing file system. Otherwise, when you replace a disk you must go to the **Storage > Internal Volume > RAID** screen, select the degraded array, and click **Repair**.

Resynchronizing or Recovering a RAID 1 Volume

Resynchronizing or recovering a RAID 1 volume that was down 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: Do not restart the NSA while the NSA is resynchronizing or recovering 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 or recovering, but it is not recommended.

Expanding a RAID 1 Volume

Replace a RAID 1 volume's hard disks with higher capacity hard disks to be able to increase the RAID 1 volume's capacity. For example, you have two 500 GB hard disks. You replace one 500 GB hard disk with a 1 TB hard disk and repair the volume. After the NSA finishes resynchronizing the volume, you replace the second 500 GB hard disk with another 1 TB hard disk and repair the volume again. After the NSA finishes the second repair, use the **Expand** icon to have the RAID1 volume use the rest of the hard disk capacity.

7.2.2 Storage Screen

Click **Storage > Volume** in the navigation panel to display the following screen. Use this screen to display internal and external volumes on the NSA.

Note: It is recommended to scan the volume every three months or 32 reboots.

Figure 75 Storage > Volume



The following table describes the labels in this screen.

Table 21 Storage > Volume

LABEL	DESCRIPTION
Internal/External Volume	These tables display information on all internal volumes (created on NSA internal disk drives) and external volumes (created on external disk drives attached to the NSA USB ports).
Create an Internal Volume	Click this to format internal hard drives and create a new volume. All data on the disk(s) will be lost.
Create an External Volume	Click this to format an external hard drive and create a new volume. All data on the disk will be lost.
Status	This field shows whether the volume is Healthy , Resync , Recovering , Degraded , or Down . See Section 7.3.1 on page 164 for details on a volume's status.
Volume	The NSA creates the volume name automatically. You can edit it.
Disk Configuration	This field shows which disks and data storage system the volume is using.
File System	This field displays the file system that an external (USB) volume is using.
Disk(s)	Click or roll your mouse over a link in this column to display the following details about the hard drive located in the corresponding hard drive bay. Type: Whether it is an internal or external (USB) hard drive. Model Name: This is the hard disk number that identifies the disk. File System: The file system that an external volume is using Capacity: The total storage space on the disk.

Table 21 Storage > Volume (continued)

LABEL	DESCRIPTION
Capacity	This field shows total disk size, the percentage of the volume being used and the percentage that is available.
Actions	This field displays icons allowing you to edit, scan, repair, expand, migrate, or delete a volume. You can also locate or eject an external volume. Note: If you delete a volume, all data in the volume disk(s) is erased.

You see a warning screen before you delete a volume.

Figure 76 Delete a Volume Warning Screen

7.3 Creating an Internal Volume


Click the **Create an Internal Volume** button in the **Storage** screen as shown in [Figure 75 on page 161](#) to open the following screen. Use this screen to create a new NSA internal disk drive volume.

Note: Creating a volume formats the hard drive. All data on the disk will be lost.

Figure 77 Storage > Create an Internal Volume


Disk Configuration

Volume Name *


JBOD 

A JBOD volume can be a single disk volume or can be made to span across several disks into a single larger volume. It does not provide any fault tolerance or performance benefits.

Volume will be created on disk1
disk2

RAID0 

Provides data striping (spreading out blocks of each file across multiple disk drives) but no redundancy. This improves performance but does not deliver fault tolerance. If one drive fails then all data in the array is lost.

RAID1 

Provides disk mirroring. Level 1 provides twice the read transaction rate of single disks and the same write transaction rate as single disks.

The following table describes the labels in this screen.

Table 22 Storage > Create an Internal Volume

LABEL	DESCRIPTION
Volume Name	<p>Type a volume name from 1 to 31 characters. To avoid confusion, it is highly recommended that each volume use a unique name.</p> <p>Acceptable characters are all alphanumeric characters, " " [spaces], "_" [underscores], and "." [periods].</p> <p>The first character must be alphanumeric (A-Z 0-9).</p> <p>The last character cannot be a space " ".</p> <p>For an external volume, type a volume name from 1 to 32 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing external volume.</p>
JBOD	<p>Use this if you want maximum storage capacity and/or you have other means of protecting your data. JBOD is the only option if you only have one disk installed. With two disks, you can choose to create a JBOD volume on one of the disks or both.</p>
RAID 0	<p>Use this if you want maximum speed for your disks, and/or you have other means of protecting your data. This is only available when you have two hard disks installed.</p>
RAID 1	<p>Use this if you want to mirror all data on one disk to the other disk. This is only available when you have two hard disks installed.</p>
Volume will be created on	<p>This field lists all hard disks installed inside the NSA. Select which disks should make up this volume. A disk can only belong to one volume. You do not need to select anything if only one hard disk is installed.</p>
Apply	<p>Click this to save your changes and create the volume.</p>
Cancel	<p>Click this to exit this screen without saving your changes or creating a volume.</p>

Note: Once you create the first volume on the NSA, it is recommended to restart the NSA for better performance.

7.3.1 Volume Status

You (the administrator) can see the status of a volume in the **Status** or **Storage** screens.

The NSA has the following classifications for the status of a volume:

- **Healthy** if all disks in the volume are OK and the file system is functioning properly.
- **OK** means the USB connected device is functioning properly.
- **Resync** when you create a RAID volume.

- **Recovering** appears when repairing a RAID 1 volume. (A RAID1 volume was once degraded, but you have installed a new disk and the NSA is restoring the RAID1 volume to a healthy state.)
- **Degraded** when a volume is currently down, but can be fixed. Data access may be slower from a degraded volume, so it's recommended that you replace the faulty disk and repair the volume as soon as you can.
- **Inactive** when a disk is missing from a RAID 0 volume or a two-disk JBOD volume. The volume is unusable. If you removed one of the disks you should be able to re-install it and use the volume again (as long as you did not change anything on the disk). If a disk has failed, you need to replace it and re-create the whole volume. All data will be lost. See page 354 for how to install or replace a hard drive.
- **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. For a degraded volume, you should replace the faulty disk as soon as possible to obtain previous performance. See your Quick Start Guide for more information on replacing a disk.

If it's down, then the only indication is that you can no longer transfer files to/from the shares in the down volume. If it's degraded, then file transfer to/from the shares in the degraded volume will be slower.

Note: There is no explicit message from CIFS that tells users their volume is degraded or down.

7.4 Editing a Volume

Click an internal volume's **Edit** icon in the **Storage** screen as shown in [Figure 75 on page 161](#) to open the following screen. Use this screen to change the volume's name.

Figure 78 Storage > Edit



The following table describes the labels in this screen.

Table 23 Storage > Edit

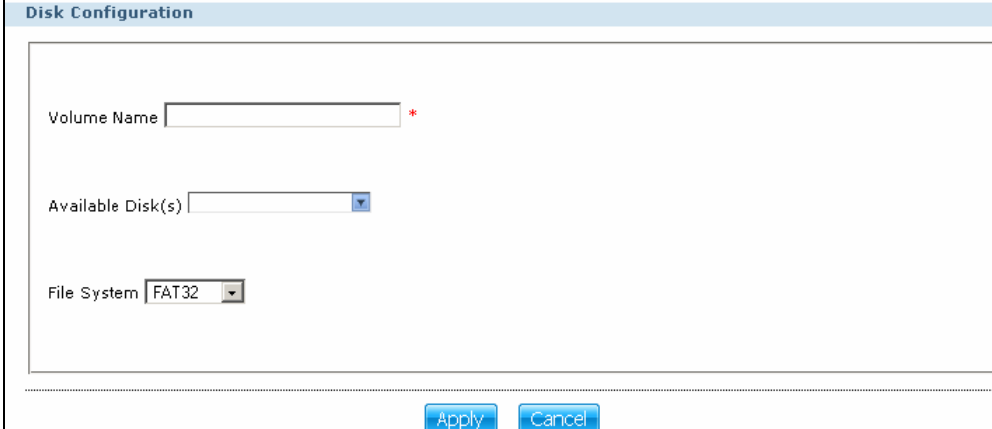
LABEL	DESCRIPTION
Volume Name	<p>For an internal volume, type a volume name from 1 to 31 characters. To avoid confusion, it is highly recommended that each volume use a unique name.</p> <p>Acceptable characters are all alphanumeric characters and " " [spaces], "_" [underscores], and "." [periods].</p> <p>The first character must be alphanumeric (A-Z 0-9).</p> <p>The last character cannot be a space " ".</p> <p>For an external volume, type a volume name from 1 to 32 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing external volume.</p>
Apply	Click this to save your changes and rename the volume.
Cancel	Click this to close this screen without saving your changes.

7.5 Creating an External Volume

Click the **Create a New External Volume** button in the **Storage** screen as shown in [Figure 75 on page 161](#) to open the following screen. Use this screen to create a new NSA external disk drive volume.

Note: Creating a volume formats the drive. All data on the disk will be lost.

Figure 79 Storage > Create an External Volume



The screenshot shows a window titled "Disk Configuration" with the following fields and controls:

- Volume Name:** A text input field with a red asterisk (*) to its right, indicating it is a required field.
- Available Disk(s):** A dropdown menu with a blue arrow pointing downwards.
- File System:** A dropdown menu currently showing "FAT32".
- Buttons:** Two buttons at the bottom: "Apply" and "Cancel", both with blue backgrounds and white text.

The following table describes the labels in this screen.

Table 24 Storage > Create an External Volume

LABEL	DESCRIPTION
Volume Name	<p>Type a volume name from 1 to 31 characters. The name cannot be the same as another existing external volume.</p> <p>Acceptable characters are all alphanumeric characters and " " [spaces], "_" [underscores], and "." [periods].</p> <p>The first character must be alphanumeric (A-Z 0-9).</p> <p>The last character cannot be a space " ".</p>
Available Disk(s)	<p>Select the external (USB) device upon which you want to create the volume.</p>
File System	<p>Select the file system you want the new volume to use.</p> <p>Windows file systems</p> <p>FAT32: Newer, and more efficient than FAT16. Supports a volume size of up to 2 TB (Tera Bytes) and individual file sizes of up to 4 GB.</p> <p>FAT16: Compatible with older Windows operating systems. Supports volume and file sizes of up to 2 GB.</p> <p>Linux file systems</p> <p>EXT2: Older file system.</p> <p>EXT3: The same as EXT2, but adds a journaled file system and is more robust.</p> <p>ReiserFS: Offers better performance for small files.</p> <p>XFS: Allows expansion for mounted volumes.</p>
Apply	<p>Click this to save your changes and create the volume.</p>
Cancel	<p>Click this to exit this screen without saving changes.</p>

7.5.1 External Disks

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

- Windows File Systems: FAT32 and FAT16.
- Linux File Systems: ReiserFS, EXT2, EXT3, and XFS.

7.6 Storage Technical Reference

This section provides some background information about the topics covered in this chapter.

7.6.1 Volumes and RAID

A volume is a storage area on a disk or disks. You can create volumes on the internal disks and external disks attached to the USB port(s). You can spread a volume across internal disks but not between internal and external disks.

RAID (Redundant Array of Independent Disks) or JBOD is the storage method that the NSA uses. The storage method you use depends on how many disks you have and how many volumes you want to create. It's important that you consider this carefully as all data is deleted when you re-create a volume.

Note: Back up your data before deleting or re-creating a volume!

For example if you originally have one disk configured as JBOD, and you then install another disk and want to configure the two disks to use RAID 1, you should first back up all your data on the two disks (see the Memeo Autobackup utility on the included CD) and then restore your data later after you create the new volume type.

Below is a table that summarizes some attributes of the various RAID levels as supported on the NSA. For capacity and storage efficiency, "S" is the size of the smallest drive in the array, and "N" is the number of drives in the array.

Storage efficiency assumes all drives are of identical size.

Performance rankings are approximations.

Table 25 RAID Quick Comparison

RAID Level	0	1
Number of Disks	2	2
Capacity	S*N	S*N/2
Storage Efficiency	100%	50%
Fault Tolerance	None	YYYY
Availability	Y	YYYY
Read Performance	YYYY	YYY
Write Performance	YYYY	YYY

7.6.2 Choosing a Storage Method for a Volume

The following is a guide to help you choose a storage method for the various number of disks supported on the NSA. See [Section 7.6.3 on page 169](#) for theoretical background on JBOD and the RAID levels used on the NSA. Typical applications for each method are also shown there.

One Disk

If you only have one disk, you must use JBOD. All disk space is used for your data - none is used for backup. If the disk fails, then you lose all the data on that volume (disk). You can add another disk to your one-disk JBOD volume later without having to re-create shares, access rights, and so on. Alternatively, you could create a different JBOD volume if you install a second disk. (and create new shares, access rights and so on).

Two Disks:

You may choose JBOD, RAID 0 or RAID 1. With two disks you could create:

- up to two JBOD volumes
- one RAID 0 or RAID 1 volume
 - Choose JBOD for flexibility and maximum usage of disk space for data.
 - Choose RAID 0 if performance matters more than data security. RAID 0 has the fastest read and write performance but if one disk fails you lose all your data on the volume. It has fast performance as it can read and write to two disks simultaneously. Performance may matter more than data security to gamers for example. This method may also be acceptable for data that is already backed up somewhere else.
 - Choose RAID 1 if data security is more important than performance. Since RAID 1 mirrors data onto a second disk, you can recover all data even if one disk fails, but the performance is slower than RAID 0.

7.6.3 Storage Methods

This section contains theoretical background on JBOD and the RAID levels used on the NSA. Redundant Array of Independent Disks (RAID) is a method of storing data on multiple disks to provide a combination of greater capacity, reliability, and/or speed. JBOD (Just a Bunch Of Disks) is not a RAID storage method but it is included in this discussion.

These are some terms that you need to know in order to understand storage systems.

- Mirroring

In a RAID system using mirroring, all data in the system is written simultaneously to two hard disks instead of one. This provides 100% data redundancy as if one disk fails the other has the duplicated data. Mirroring setups always require an even number of drives.

- Duplexing

Like in mirroring, all data is duplicated onto two distinct physical hard drives but in addition it also duplicates the hardware that controls the two hard drives (one of the drives would be connected to one adapter and the other to a second adapter).

- Striping

Striping is the breaking up of data and storing different data pieces on each of the drives in an array. This allows faster reading and writing as it can be done simultaneously across disks. Striping can be done at the byte level, or in blocks. Byte-level striping means that the first byte of the file is sent to the first drive, then the second to the second drive, and so on. Block-level striping means that each file is split into blocks of a certain size and those are distributed to the various drives. The size of the blocks used is also called the stripe size (or block size).

- Parity

In mirroring 50% of the drives in the array are reserved for duplicate data. Parity is another way to allow data recovery in the event of disk failure using calculations rather than duplicating the data. If you have 'n' pieces of data, parity computes an extra piece of data. The 'n+1' pieces of data are stored on 'n+1' drives. If you lose any one of the 'n+1' pieces of data, you can recreate it from the 'n' that remain, regardless of which piece is lost. Parity protection is used with striping, and the "n" pieces of data are typically the blocks or bytes distributed across the drives in the array. The parity information can either be stored on a separate, dedicated drive, or be mixed with the data across all the drives in the array.

Note: In the following figures, A1, A2, A3 and so on are blocks of data from the A file. Similarly, B1, B2, B3 and C1, C2, C3 are blocks of data from the B and C files.

JBOD

JBOD allows you to combine multiple physical disk drives into a single virtual one, so they appear as a single large disk. JBOD can be used to turn multiple different-sized drives into one big drive. For example, JBOD could convert 80 GB and 100 GB drives into one large logical drive of 180 GB. If you have two JBOD volumes (with one disk in each), a failure of one disk (volume) should not affect the other volume (disk). JBOD read performance is not as good as RAID as only one disk can be read at a time and they must be read sequentially. The following figure

shows disks in a single JBOD volume. Data is not written across disks but written sequentially to each disk until it's full.

Table 26 JBOD

A1	B1
A2	B2
A3	B3
A4	B4
DISK 1	DISK 2

RAID 0

RAID 0 spreads data evenly across two or more disks (data striping) with no mirroring nor parity for data redundancy, so if one disk fails the entire volume will be lost. The major benefit of RAID 0 is performance. The following figure shows two disks in a single RAID 0 volume. Data can be written and read across disks simultaneously for faster performance.

Table 27 RAID 0

A1	A2
A3	A4
A5	A6
A7	A8
DISK 1	DISK 2

RAID 0 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 two disks of sizes 100 GB and 200 GB respectively in a RAID 0 volume, then the maximum capacity is 200 GB (2 * 100 GB, the smallest disk size) and the remaining space (100 GB) is unused.

Typical applications for RAID 0 are non-critical data (or data that changes infrequently and is backed up regularly) requiring high write speed such as audio, video, graphics, games and so on.

RAID 1

RAID 1 creates an exact copy (or mirror) of a set of data on another disk. This is useful when data backup is more important than data capacity. The following

figure shows two disks in a single RAID 1 volume with mirrored data. Data is duplicated across two disks, so if one disk fails, there is still a copy of the data.

Table 28 RAID 1

A1	A1
A2	A2
A3	A3
A4	A4
DISK 1	DISK 2

As RAID 1 uses mirroring and duplexing, a RAID 1 volume needs an even number of disks (two or four for the NSA).

RAID 1 capacity is limited to the size of the smallest disk in the RAID array. 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 (50 GB) is unused.

Typical applications for RAID 1 are those requiring high fault tolerance without need of large amounts of storage capacity or top performance, for example, accounting and financial data, small database systems, and enterprise servers.

RAID and Data Protection

If a hard disk fails and you're using a RAID 1 volume, then your data will still be available (but at degraded speeds until you replace the hard disk that failed and resynchronize the volume). However, RAID cannot protect against file corruption, virus attacks, files incorrectly deleted or modified, or the NSA malfunctioning. Here are some suggestions for helping to protect your data.

- Place the NSA behind a hardware-based firewall. It should have stateful packet inspection, IDP (Intrusion Detection and Prevention), and anti-virus (like ZyXEL's ZyWALL UTM products for example).
- Use anti-virus software on your computer to scan files from others before saving the files on the NSA.
- Keep another copy of important files (preferably in another location).

8.1 Overview

This chapter discusses the network configuration screens. The **Network** screens allow you to configure TCP/IP and PPPoE settings for the NSA.

8.2 What You Can Do

- Use the **TCP/IP** screen ([Section 8.4 on page 175](#)) to assign the NSA a dynamic or static IP address and DNS information.
- Use UPnP port mapping ([Section 8.5 on page 178](#)) to automatically configure your Internet gateway's firewall and Network Address Translation (NAT) to allow access to the NSA from the Internet.
- Use the **PPPoE** screen ([Section 8.6 on page 182](#)) to configure PPPoE settings for a direct Internet connection.

8.3 What You Need to Know

IP Address

The NSA needs an IP address to communicate with other devices on your network. The NSA can get an IP address automatically if you have a device on your network that gives them out. Or you can assign the NSA a static (fixed) IP address.

DNS Server Address

A DNS (Domain Name System) server maps domain names (like www.zyxel.com) to their corresponding numerical IP addresses. This lets you use domain names to access web sites without having to know their IP addresses. The NSA can receive the IP address of a DNS server automatically (along with the NSA's own IP address). You can also manually enter a DNS server IP address in the NSA.

PPPoE

Point-to-Point Protocol over Ethernet (PPPoE) allows the NSA to establish a direct Internet connection if you do not have a router. PPPoE is a dial-up connection. You need a username and password from your Internet Service Provider (ISP) to set up the connection.

Jumbo Frames

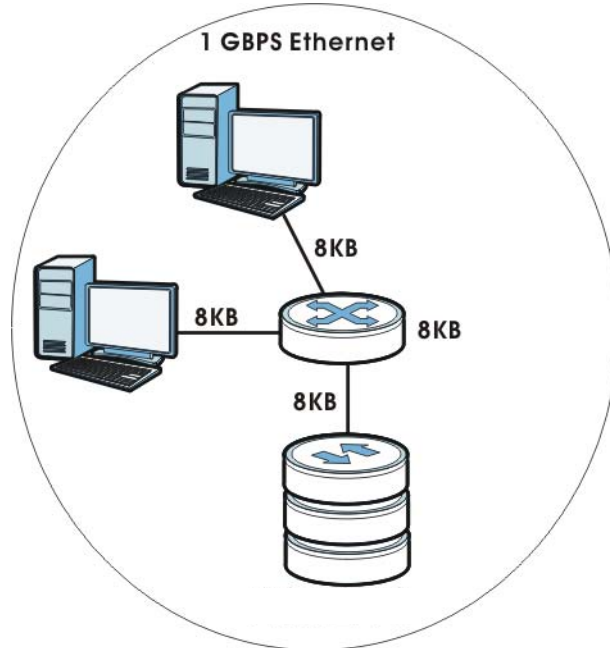
Jumbo frames are Ethernet frames larger than 1500 bytes. They enable data transfer with less overhead. The bigger the frame, the better the network performance. Your network equipment such as computers, switches and routers must be capable of supporting jumbo frames. You also need to enable jumbo frames in all related network devices.

To use jumbo frames, your LAN must support 1 Gbps transmissions (Gigabit Ethernet). All of your network devices (computer Ethernet cards and switches, hubs, or routers) must also support the same size of jumbo frames that you specify in the NSA.

Note: If you enable jumbo frames on the NSA in a network that does not support them, you will lose access to the NSA. If this occurs, you will have to restore the factory default configuration. Push the **RESET** button on the NSA's rear panel and release it after you hear a beep.

In the following example, the NSA has jumbo frames enabled and set to 8KB frames. This means the computer, notebook computer, and switch must also have jumbo frames enabled and be capable of supporting 8KB frames.

Figure 80 Jumbo Frames



8.4 The TCP/IP Screen

Use the **TCP/IP** screen to have the NSA use a dynamic or static IP address, subnet mask, default gateway and DNS servers.

Click **Network > TCP/IP** in the navigation panel to open the following screen.

Note: If you change the NSA's IP address, you need to log in again after you apply changes.

Figure 81 Network > TCP/IP

The following table describes the labels in this screen.

Table 29 Network > TCP/IP

LABEL	DESCRIPTION
IP Address	
Dynamic	Select this option to have the NSA get IP address information automatically. If no IP address information is assigned, the NSA uses Auto-IP to assign itself an IP address and subnet mask. For example, you could connect the NSA directly to your computer. If the computer is also set to get an IP address automatically, the computer and the NSA will choose addresses for themselves and be able to communicate.
Static	Select this option for the NSA to use fixed TCP/IP information. You must fill in the following fields.
IP Address	Type an IP address in this field.
IP Subnet Mask	Type an IP subnet mask in this field.

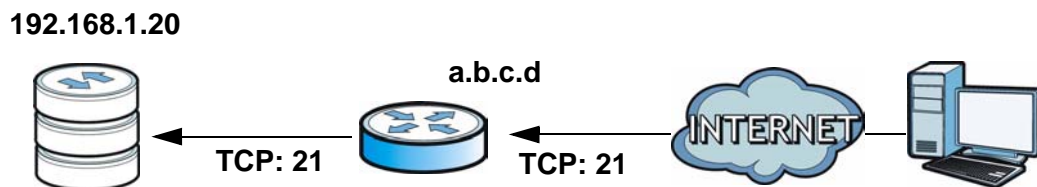
Table 29 Network > TCP/IP (continued)

LABEL	DESCRIPTION
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. If you have the IP address(es) of the DNS server(s), enter them.
Dynamic	Select the option to have the NSA get a DNS server address automatically.
Static	Select this option 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.
Secondary DNS Server	Type a secondary DNS server IP address.
HTTP (Web Configurator)	
Enable Another Web Configuration Port	Select this to configure an additional HTTP port for accessing the web configurator. Specify a number in the Port Number field.
Jumbo Frames	<p>Jumbo frames improve network performance. You must have a 1 Gbps (Gigabit Ethernet) network that supports jumbo frames. Select the largest size of frame that all of your network devices (including computer Ethernet cards and switches, hubs, or routers) support.</p> <p>When enabled, you can choose between 4 KB, 8 KB, and 9 KB frame sizes.</p> <p>Note: If you enable jumbo frames on the NSA in a network that does not support them, you will lose access to the NSA. If this occurs, you will have to restore the factory default configuration. Push the RESET button on the NSA's rear panel and release it after you hear a beep.</p>
Network Diagnostic Tool	<p>Use this section to test the network connection to a particular IP address or domain name. Select an address or type it into the field. Then click Ping to have the NSA send a packet to test the network connection.</p> <ul style="list-style-type: none"> • Successfully pinged host - The NSA is able to "ping" the host, the network connection is OK. • Unable to ping host - The NSA is able to "ping" the selected host.
Apply	Click this 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 NAS Starter Utility to rediscover it.
Reset	Click this to restore your previously saved settings.

8.5 UPnP Port Mapping Screen

Use UPnP (Universal Plug and Play) port mapping to allow access from the WAN to services you select on the NSA. It is recommended that you place the NSA behind an Internet gateway firewall device to protect the NSA from attacks from the Internet (see [RAID and Data Protection on page 172](#) for firewall type suggestions). Many such Internet gateways use UPnP to simplify peer-to-peer network connectivity between devices. UPnP can automatically configure the Internet gateway's firewall and Network Address Translation (NAT) to allow access to the NSA from the Internet.

Figure 82 UPnP for FTP Access



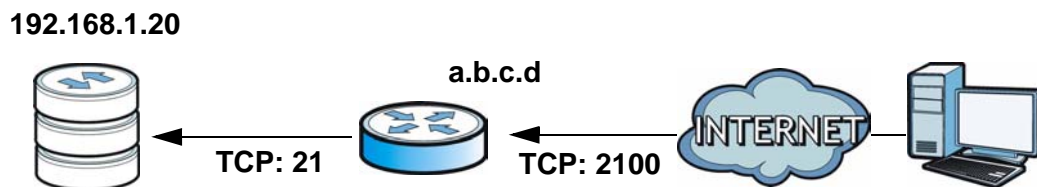
In the above example, UPnP creates a firewall rule and NAT port forwarding mapping to send FTP traffic (using TCP port number 21) from the public IP address a.b.c.d to the NSA's private IP address of 192.168.1.20.

Use the NSA's **UPnP Port Mapping** screen to configure the UPnP settings your Internet gateway uses to allow access from the WAN (Internet) to services you select on the NSA. You can also set which port Internet users need to use in order to access a specific service on the NSA.

Note: To use UPnP port mapping, your Internet gateway must have UPnP enabled.

If your Internet gateway supports Port Address Translation (PAT is sometimes included with a port forwarding feature), you can have the Internet users use a different TCP port number from the one the NSA uses for the service.

Figure 83 UPnP Port Address Translation for FTP Example



In the above example, the Internet gateway uses PAT to accept Internet user FTP sessions on port 2100, translate them to port 21, and forward them to the NSA.

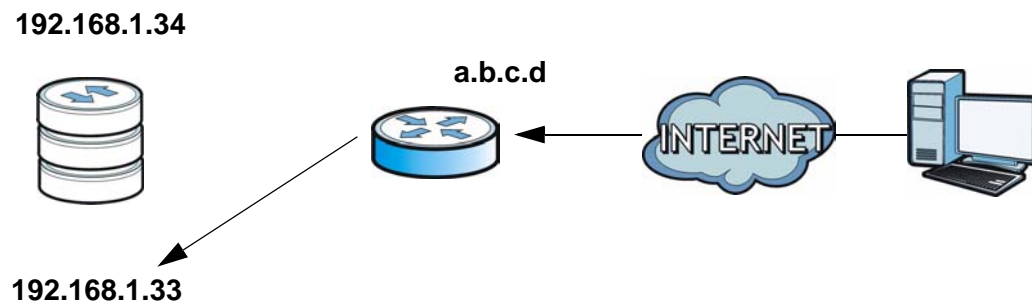
8.5.1 UPnP and the NSA's IP Address

It is recommended that the NSA use a static IP address (or a static DHCP IP address) if you will allow access to the NSA from the Internet. The UPnP-created NAT mappings keep the IP address the NSA had when you applied your settings in the **UPnP Port Mapping** screen. They do not automatically update if the NSA's IP address changes.

Note: WAN access stops working if the NSA's IP address changes.

For example, if the NSA's IP address was 192.168.1.33 when you applied the **UPnP Port Mapping** screen's settings and the NSA later gets a new IP address of 192.168.1.34 through DHCP, WAN access stops working because the Internet gateway still tries to forward traffic to IP address 192.168.1.33. Since you can no longer access the NSA from the WAN, you would have to access the NSA from the LAN and re-apply your **UPnP Port Mapping** screen settings to update the Internet gateway's UPnP port mappings.

Figure 84 UPnP Using the Wrong IP Address



8.5.2 UPnP and Security

UPnP's automated nature makes it easier to use than manually configuring firewall and NAT rules, but it is also less secure. Using UPnP may make your network more susceptible to snooping and hacking attacks.

8.5.3 The NSA's Services and UPnP

This section introduces the NSA's services which an Internet gateway can use UPnP to allow access to from the Internet.

BitTorrent

BitTorrent is a distributed peer-to-peer file-sharing protocol that the NSA's download service can use. Using UPnP port mapping for BitTorrent lets BitTorrent work faster.

CIFS (Windows File Sharing)

Common Internet File System (CIFS) is a standard protocol supported by most operating systems in order to share files across the network. Using UPnP port mapping for CIFS allows users to connect from the Internet and use programs like Windows Explorer to access the NSA's shares to copy files from the NSA, delete files on the NSA, or upload files to the NSA from the Internet.

If you configure UPnP port mapping to allow CIFS access from the WAN but cannot get it to work, you may also have to configure the Internet gateway to also allow NetBIOS traffic. See [Section 6.3 on page 153](#) for more on CIFS.

FTP

File Transfer Protocol is a standard file transfer service used on the Internet. Using UPnP port mapping for FTP allows remote users to use FTP from the Internet to access the NSA's shares. A user with read and write access to a share can copy files from the share, delete files from the share, or upload files to the share. See [Section 9.4 on page 188](#) for more on FTP. If you use UPnP to allow FTP access from the WAN, you may want to use a different WAN port number (instead of the default of port 21) to make it more secure. Remember to tell the remote users to use the custom port number when using FTP to access the NSA.

HTTP (Web Configurator)

You can use UPnP port mapping to allow access to the NSA's management screens. If you use UPnP to allow web configurator access from the WAN, you may want to use a different WAN port number (instead of the default of port 80) to make it more secure. Remember to use the custom port number when accessing the NSA's web configurator from the Internet.

HTTP (Web Published Shares)

This is the NSA's web publishing feature that lets people access files using a web browser without having to log into the **Home** screens. Use UPnP port mapping to allow access to these files from the Internet without having to enter a user name or password. See [Section 9.7 on page 204](#) for more on web publishing.

8.5.4 Configuring UPnP Port Mapping

Click **Network > UPnP > Port Mapping** to display the **UPnP Port Mapping** screen.

Use this screen to set how the Internet gateway's UPnP feature configure's the Internet gateway's NAT IP address mapping and port mapping settings. These settings allow Internet users connected to the Internet gateway's WAN interface to

access services on the NSA. You can set which port Internet users need to use to access a specific service on the NSA.

Note: Some Internet gateways will delete all UPnP mappings after reboot. So if the Internet gateway reboots, you may need to use this screen again to re-apply the UPnP port mapping.

Figure 85 Network > UPnP > Port Mapping

UPnP Port Map Settings

Note:

- In order to use a port number on the gateway device(WAN) that is different from that on the NSA (LAN), your gateway device should support Port Address Translation.
- For Distributed Hash Table (DHT) support, the BitTorrent service will also attempt to open the following UDP port: 9089

LAN		WAN		
Service Name	LAN Port	Service Name	Enable WAN Access	WAN Port
BitTorrent	9090	BitTorrent	<input checked="" type="checkbox"/>	9090
CIFS (Windows File Sharing)	445	CIFS (Windows File Sharing)	<input type="checkbox"/>	--
FTP	21	FTP	<input type="checkbox"/>	--
HTTP (Web Configurator)	80	HTTP (Web Configurator)	<input type="checkbox"/>	--
HTTP (Web published shares)	80	HTTP (Web published shares)	<input type="checkbox"/>	--

172.16.26.2

▶ : This service requires that the LAN port setting is the same as the WAN port setting
 ⚠ : This port setting currently conflicts with another service's port.
 ⚠ : This port is being used by another service but will be replaced if you apply this setting.

Apply Reset

The following table describes the labels in this screen.

Table 30 Network > UPnP > Port Mapping





LABEL	DESCRIPTION
LAN	Use these fields to specify what port the Internet gateway uses to connect from its LAN port to the service on the NSA.
Service Name	This read-only field identifies a service on the NSA.
LAN Port	Specify the port number (1~65,536) the Internet gateway needs to use to connect from its LAN port to the service on the NSA. This is the NSA's internal port number for the service. Changing a service's port number in this screen also changes it in other NSA screens that display it. Similarly, changing a service's port number in another NSA screen also changes it here.
	The number below this icon is your Internet gateway's WAN IP address (the IP address your Internet gateway uses for connecting to the Internet).
WAN	Use these fields to specify what port Internet users must use to connect to the Internet gateway's WAN port in order to connect to the service on the NSA.
Service Name	This read-only field identifies a service on the NSA.

Table 30 Network > UPnP > Port Mapping (continued)

LABEL	DESCRIPTION
Enable WAN Access	<p>Select this check box to have UPnP configure your Internet gateway to allow access from the Internet to the NSA's service.</p> <p>If you clear this check box, people will not be able to access the NSA's service from the Internet unless you manually configure the Internet gateway's firewall and NAT rules to allow access.</p>
WAN Port	<p>When you enable WAN access for one of the NSA's services, specify the port number (1–65,536) Internet users need to use to connect to the Internet gateway's WAN port in order to access the service on the NSA. Whoever wants to access a service on the NSA from the Internet must use this port number.</p> <p>BitTorrent's WAN port must be the same as the LAN port.</p> <p>Make sure there is not another service using TCP protocol with the same port number. See Appendix C on page 407 for a list of common services and their associated protocols and port numbers.</p> <p>If another device is using the same port (the Internet gateway has the same port number mapped to another LAN IP address), the NSA overwrites it when you apply the setting and WAN users can no longer access the other device.</p>
	This icon means the service's LAN and WAN port numbers must be the same.
	This icon means another service is using the same port number as this service. Change the port number of one of the services so they use different port numbers.
	This icon means another service is using the listed port, but the port the other service is using will be replaced if you apply the setting. The other service will no longer be accessible from the listed port.
Apply	Click Apply to save your changes back to the NSA.
Reset	Click Reset to begin configuring this screen afresh.

8.6 The PPPoE Screen

Use this screen to configure PPPoE settings for a direct Internet connection.

Click **Network > PPPoE** in the navigation panel to open the following screen.

Figure 86 Network > PPPoE

The following table describes the labels in this screen.

Table 31 Network > PPPoE

LABEL	DESCRIPTION
Status	
Status	This field displays the status of PPPoE connection.
IP Address	This field displays the IP address of your PPPoE connection.
IP Subnet Mask	This field displays the IP subnet mask of your PPPoE connection.
Configuration	
Enable PPPoE Connection	Select this option to establish a direct Internet connection for the NSA. You need to enter the username and password as given by your ISP.
Username	Enter the username exactly as your ISP assigned. If assigned a name in the form user@domain where domain identifies a service name, then enter both components exactly as given.
Password	Enter the password associated with the username above.
Password (Confirm)	Retype the password for confirmation.
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

Applications

9.1 Overview

This chapter discusses the features in the **Application** screens. The NSA contains various applications for file sharing and downloading.

9.2 What You Can Do

- Use the **FTP Server** screen ([Section 9.4 on page 188](#)) to configure settings for FTP file transfers to/from the NSA.
- Use the **Media Server** screen ([Section 9.5 on page 190](#)) to share files with media clients.
- Use the **Download Service** screen ([Section 9.6 on page 191](#)) to download files from the Internet.
- Use the **Web Publishing** screen ([Section 9.7 on page 204](#)) to publish shares for people to access files using a web browser.
- Use the **Broadcatching** screen ([Section 9.8 on page 206](#)) to download frequently updated digital content like TV programs, radio talk shows, Podcasts (audio files), and blogs.
- Use the **Print Server** screen ([Section 9.9 on page 214](#)) to share a printer.
- Use the **Copy/Sync Button** screen ([Section 9.10 on page 216](#)) to transfer files between a USB device and the NSA.
- Use the **Package** screen ([Chapter 10 on page 231](#)) to set up additional applications in your NSA. The NSA can download multiple packages/files at once and automatically goes through all the installation steps.
- Use the **Auto Upload** screens ([Chapter 11 on page 285](#)) to upload files in selected shares to your Flickr and/or YouTube accounts.

9.3 What You Need to Know

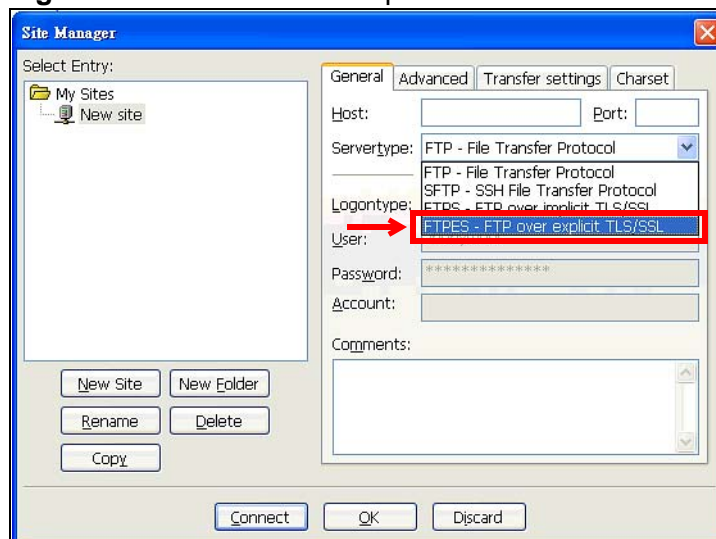
FTP

File Transfer Protocol (FTP) is a file transfer service that operates on the Internet. A system running the FTP server accepts commands from a system running an FTP client. FTP is not a secure protocol. Your file transfers could be subject to snooping.

FTPES (File Transfer Protocol over Explicit TLS/SSL)

File Transfer Protocol over Explicit TLS/SSL (FTPES) is a file transfer service that uses either TLS (Transport Layer Security) or SSL (Secure Sockets Layer) for secure transfers across the Internet. It requests for a mutual method of encryption from the FTP server for its file transfer sessions. Your FTP client must be set to use FTPES as in the following example.

Figure 87 FTP Client Example



Media Server

The media server feature lets anyone on your network play video, music, and photos from the NSA (without having to copy them to another computer). The NSA can function as a DLNA-compliant media server and/or an iTunes server. The NSA streams files to DLNA-compliant media clients or computers using iTunes. The Digital Living Network Alliance (DLNA) is a group of personal computer and electronics companies that works to make products compatible in a home network.

iTunes Server

The NSA iTunes server feature lets you use Apple's iTunes software on a computer to play music and video files stored on the NSA. You can download iTunes from www.apple.com.

Download Service

The NSA's download service downloads files from the Internet directly to the NSA. You do not have to download to your computer and then copy to the NSA. This can free up your computer's system resources.

The NSA can download using these protocols.

- HTTP: The standard protocol for web pages.
- FTP: A standard Internet file transfer service.
- BitTorrent: A popular distributed peer-to-peer files sharing protocol.

BitTorrent

The NSA includes a BitTorrent client for fast downloading and sharing of large files (such as educational public domain videos). With BitTorrent, you share while you're downloading the file. BitTorrent breaks up the file and distributes it in hundreds of chunks. You start sharing the file as soon as you have downloaded a single chunk.

Web Publishing

Web publishing lets you "publish" shares (containing folders and files) on the NSA so people can access the files using a web browser without having to log into the Home screens. This way you can share files with others without them having to know and enter a username and password.

For example, if you want to share photos in a FamilyPhotos share, you could "web publish" it and others could use a web browser to access the photos at <http://my-NSA's-IP-Address/MyWeb/FamilyPhotos>.

Broadcatching

Broadcatching is the downloading of digital content from Internet feeds. Use broadcatching to have the NSA download frequently updated digital content like TV programs, radio shows, podcasts (audio files), and blogs.

RSS

RSS (Really Simple Syndication) is a format for delivering frequently updated digital content. A channel uses a feed to deliver its contents (items). Subscribe the NSA to a feed to be able to download the contents.

9.4 FTP Server

Use FTP or FTPES (FTP over Explicit TTL/SSL) to upload files to the NSA and download files from the NSA. Click **Applications > FTP** to open the following screen.

Figure 88 Applications > FTP

The following table describes the labels in this screen.

Table 32 Applications > FTP

LABEL	DESCRIPTION
FTP	
Enable FTP	You can use FTP to send files to the NSA or get files from the NSA. Select this check box to allow users to connect to the NSA via FTP; otherwise clear the check box.

Table 32 Applications > FTP

LABEL	DESCRIPTION
Connection Limit	Enter the maximum number of concurrent FTP connections allowed on the NSA in this field. The connection limit is 20.
Idle Timeout	Enter the length of time that an FTP connection can be idle before timing out. The timeout limit is 300 minutes.
Port Number	This is the port number used by the NSA for FTP traffic.
Enable Anonymous FTP Access	Select this check box to allow any user to log into the NSA using 'FTP' or 'anonymous' as a username and no password. Any other name is considered a username, so must be valid and have a corresponding correct password.
Customize the port range for data transfer	<p>Select this check box to assign a port range for FTP clients to use when downloading files from the NSA using passive mode.</p> <p>The connection limit is restricted to half of the port numbers within the range if this value is smaller than the one configured in the Connection Limit field. For example, you specified a port range from 1024 to 1029 and configured 10 in the Connection Limit field. The FTP connection limit will only be 3 (6 ports in the range divided by 2) because it is the smaller value.</p>
Starting Port	Enter the first port number in the range. Choose from 1024 to 65535.
Ending Port	Enter the last port number in the range. Choose from 1024 to 65535.
Download/Upload Rate For All Users (include admin)	<p>Select this if you want to limit the download/upload bandwidth for all users who are logged into the NSA, including the administrator.</p> <ul style="list-style-type: none"> • Max. Download Rate - Enter the download speed (in kilobytes/s) that the NSA allows for users who are logged into the NSA. • Max. Upload Rate - Enter the upload speed (in kilobytes/s) that the NSA allows for users who are logged into the NSA.
Download/Upload Rate For Anonymous Users	<p>Select this if you want to limit the download/upload bandwidth for users who log into the NSA using 'FTP' or 'anonymous' as a username and no password.</p> <ul style="list-style-type: none"> • Max. Download Rate - Enter the download speed (in kilobytes/s) that the NSA allows for users who are logged into the NSA. • Max. Upload Rate - Enter the upload speed (in kilobytes/s) that the NSA allows for users who are logged into the NSA.
Character Set	<p>The NSA uses UTF-8 (8-bit UCS/Unicode Transformation Format) format for FTP by default. If the NSA's folders, or file names do not display correctly in your FTP client, select the appropriate language encoding here.</p> <p>This setting applies to all FTP client connections to the NSA. It does not affect your Windows/CIFS connections (it will not correct the character display in Windows Explorer).</p>
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

9.5 The Media Server Screen

The **Media Server** screen allows you to share files with media clients.

Click **Applications > Media Server** to open the following screen. Use this screen to select shares to publish (share with media clients like the DMA-2500 and iTunes) and turn the iTunes server on or off.

Figure 89 Applications > Media Server

Publish	Share Name	Publish Music Tracks	Publish Photos	Publish Videos
<input type="checkbox"/>	public	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	video	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	photo	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	music	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	admin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following table describes the labels in this screen.

Table 33 Applications > Media Server

LABEL	DESCRIPTION
Media Server	
Refresh Status	Click this to update the information in the Status field.
Rebuild Database	Click this if the media clients cannot see the files in the media server.
Status	This shows the media server's current state of activity. Synchronizing displays while the NSA is building the media database. Ready means the NSA has finished building the database. Stopped displays when the media server is dead and for a short time while the media server is restarted before rebuilding the database.
Number of Music Tracks	This is how many music files the media server has to share out to media clients.
Number of Photos	This is how many photo files the media server has to share out to media clients.

Table 33 Applications > Media Server

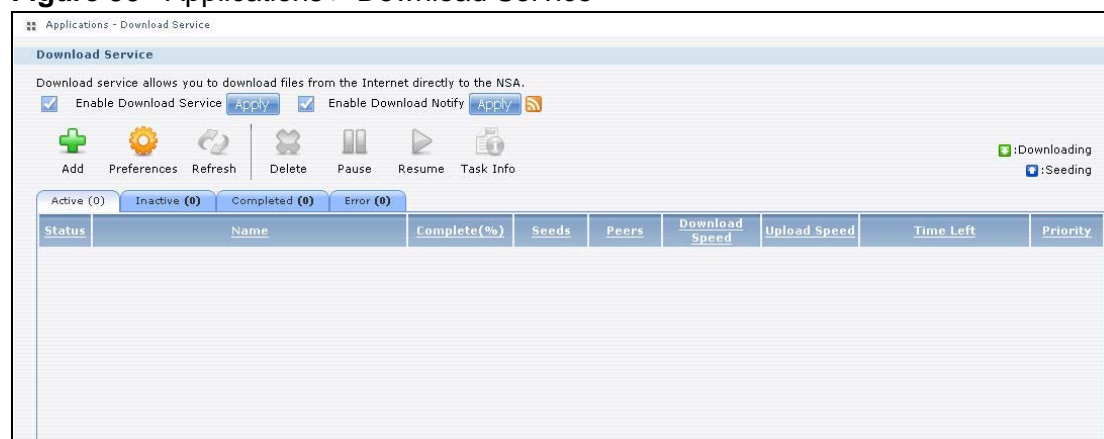
LABEL	DESCRIPTION
Number of Videos	This is how many video files the media server has to share out to media clients.
Publish	Select this to have the media server share a share's media files with media clients.
Share Name	This column lists names of shares on the NSA.
Publish Music Tracks	Select this to give media clients access to the share's music files.
Publish Photos	Select this to give media clients access to the share's photo files.
Publish Videos	Select this to give media clients access to the share's video files.
Enable iTunes Server	Check this to let anyone on your network use iTunes to play music files in the published shares.
Enable SqueezeCenter	This is available if the SqueezeCenter application is installed using Package Management (see Section 10.4 on page 232). Check this to enable SqueezeCenter .
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

9.6 The Download Service Screen

The Download Service screen allows you to download files from the Internet.

Click **Applications > Download Service** to open the following screen. Use this screen to manage the NSA's file downloads.

Note: By default, the NSA saves downloads in the **admin** share's **download** folder.

Figure 90 Applications > Download Service

The following table describes the labels in this screen.

Table 34 Applications > Download Service


LABEL	DESCRIPTION
Enable Download Service	Use this option (and click the Apply button) to turn the download service off or on. If you turn off the service, all downloads are paused. Files currently downloading are queued. Turning on the download service resumes downloads (or restarts them if they are not able to resume).
Enable Download Notify	Use this option (and click the Apply button) to turn the download service notification off or on. See Section 9.11.4 on page 220 for more details about this feature.
	<p>At the time of writing, the NSA supports RSS 2.0 feeds.</p> <p>Click this to get and subscribe to the NSA channel feed. This enables you to keep track and download the NSA's new contents (items).</p>
Add	After you find a file to download, copy the file's URL. Then log into the NSA web configurator and go to the Applications > Download Server screen and click this button. A screen opens where you create a new download task. You can paste the file's URL or use a BitTorrent file.
Preferences	Click this to open a screen where you can set the default location for saving downloads and configure your BitTorrent settings.
Refresh	Click this to update the information displayed on the screen.
Delete	<p>To delete download tasks (or manually clear out completed download tasks), select a download task and click this to remove it from the list. A pop-up screen asks you to confirm. Click Apply to delete or Cancel to quit. When you delete a download task, you are given the option to delete the associated files. Selecting this option deletes a downloaded file and in the case of a BitTorrent download task, also deletes the related .torrent file.</p> <p>Use your keyboard's [SHIFT] key to select a range of download tasks. Use the [CTRL] key and click individual download tasks to select multiple individual download tasks.</p>
Pause	<p>Select a downloading item and click this to temporarily stop the download. Paused downloads appear in the Download Service screen's Inactive tab.</p> <p>Use your keyboard's [SHIFT] key to select a range of download tasks. Use the [CTRL] key and click individual download tasks to select multiple individual download tasks.</p>
Resume	<p>Select a paused item and click this to continue downloading the file.</p> <p>Select a completed item and click this to re-seed a torrent file or download a file again. If you want to re-seed a BitTorrent task, keep the torrent file and the completed file in their original locations.</p>
Task Info	Select an item on the list and click this to display information about the download task. See Section 9.6.5 on page 203 for more details.
The table lists your downloads. Click a column's heading to sort the entries by that criteria.	

Table 34 Applications > Download Service (continued)


LABEL	DESCRIPTION
Active	<p>Click this to see the list of files the NSA is currently downloading or sharing with other BitTorrent users. The NSA handles a maximum of 10 active tasks at a time (or fewer depending on how much of the NSA's system memory is available). If you add more, they appear in the Inactive tab.</p> <p>BitTorrent downloads may appear in the Inactive tab for a while before showing in the Downloading tab. The NSA automatically moves completed tasks to the Completed tab.</p>
Inactive	<p>Click this to see the list of files that are queued (waiting in line) for the NSA to download or the downloads that have been manually paused.</p>
Completed	<p>Click this to see the list of files that the NSA has finished downloading.</p> <p>The Location column shows where a downloaded file is saved on the NSA. Click on the location link to open the share browser and access the file.</p>
Error	<p>Click this to see the list of files that the NSA was not able to download. The NSA automatically retries unsuccessful download attempts. The download displays in the error tab when the re-attempts are also unsuccessful and the NSA stops trying to download the file. To try the download again, use the Add button to create a new download task.</p>
Status	<p>The following icons show the download's status.</p>  <p>Completed: The NSA has downloaded the whole file.</p> <p>Seeding: The download is finished and the NSA is allowing other BitTorrent users to download it.</p> <p>Downloading: The NSA is getting the file.</p> <p>Queued: The download is waiting in line for the NSA to download it.</p> <p>Pause: The download has been manually stopped. Select it and click Resume to continue it.</p> <p>Error: The NSA was not able to complete the download. Select it and click Resume to reattempt the download.</p>
Name	<p>This identifies the download file. A "... " indicates an abbreviated name. Hold your cursor over the name to display the full name.</p>
Complete (%)	<p>This is the percentage of the file that the NSA has downloaded.</p>
Location	<p>This appears in the Completed tab.</p> <p>It displays the path for where the file is saved. Click on the location link to open the share browser and access the file.</p>

Table 34 Applications > Download Service (continued)

LABEL	DESCRIPTION
Seeds	<p>Seeds apply to BitTorrent downloads. This is the number of computers that are sharing the complete file that you are downloading.</p> <p>This value is in the format "Leeches(Seeds)" where Leeches refer to peers that do not have a complete copy of the file yet and are still downloading; Seeds refer to peers that have the complete file.</p>
Peers	<p>Peers apply to BitTorrent downloads. This is the number of other computers that are also downloading (and sharing) the file you are downloading.</p> <p>This value is in the format "ConnectedPeers(AllPeers)[Health]" where Connected Peers is the number of computers to which the NSA is connected in order to download the file; AllPeers refer to the total number of computers to which the NSA can connect in order to download the file; Health indicates the availability of the file.</p>
Download Speed	<p>This is how fast the NSA is getting the file.</p> <p>It is normal for a BitTorrent download to start out with a slow download speed since it has to set up numerous connections. The speed should increase as the download progresses and decrease near the end of the download.</p>
Upload Speed	<p>This is how fast the NSA is sending the file to other BitTorrent users.</p>
Time Left	<p>This is how much longer (in hours, minutes, and seconds) it should take to finish the download at the current download speed.</p>
Priority	<p>This is the download's priority on the NSA. You can set a currently downloading or queued download to high or automatic priority. You can set a download to high priority to have the NSA try to download it before the other files. However the actual download speed depends more on factors like the speed of you Internet connection, the speed of the download source's Internet connection, how many others are trying to download at the same time, the peers and seeds available and general network conditions.</p>
Error Code	<p>This appears in the Error tab.</p> <p>This shows the tag for the error that occurred.</p>
Error Message	<p>This appears in the Error tab.</p> <p>This message states what went wrong with the download.</p>

9.6.1 Adding a Download Task

Click **Applications > Download Service > Add** to open the following screen. Use this screen to specify a file for the NSA to download. [Section 4.9 on page 94](#) provides a tutorial on adding a download task.

Figure 91 Applications > Download Service > Add

The following table describes the labels in this screen.

Table 35 Applications > Download Service > Add

LABEL	DESCRIPTION
Source	
URL	<p>Paste the URL of the file you want to download into this field. The URL can be for an HTTP, FTP, or BitTorrent download.</p> <p>For a BitTorrent download, you can copy and paste the URL of the .torrent file. The NSA will automatically download the .torrent file and use it. You do not have to manually download the .torrent file or save it to your computer.</p> <p>Note: Make sure the link opens either the file you want or a pop-up window about how to handle the file.</p> <p>It is also OK for the link to open a .torrent file. If you are redirected to a screen that says the download should start in a few seconds, there may be a link to click if the download does not start automatically. See if that link opens the file or the pop-up window.</p>
Torrent File	<p>A "torrent" file has information the NSA uses to do a BitTorrent download. A torrent file uses a .torrent extension. If you already have a torrent file saved on your computer, select the Torrent File option and specify its path or click Browse and look for its location.</p>

Table 35 Applications > Download Service > Add

LABEL	DESCRIPTION
Location of Downloaded Files	<p>This shows where the NSA stores new downloads (Put incomplete downloads in) and where the NSA moves completed downloads (Move completed downloads to).</p> <p>The Share column shows the name of the share where the file is downloaded.</p> <p>The Path column points to the location in the share where the NSA will save the downloaded files.</p> <ul style="list-style-type: none"> • BitTorrent jobs are stored in /*/incoming (where '*' is a folder that you have set.) • HTTP/FTP jobs are stored in /* (where '*' is a folder that you have set.) • All jobs triggered by RSS channels create the subfolder in /* using the channel name where it store all files downloaded from that channel (where '*' is a folder that you have set.)
Edit	<p>Click this to open the following screen where you can set the default folder location where you "Put incomplete downloads in" and "Move complete downloads to".:</p> <div data-bbox="760 835 1234 1146" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> </div> <ul style="list-style-type: none"> • Share - Select the share from the list. • Path - Type the folder location in the share directly or click Browse to open the following screen and navigate to the file's location. <div data-bbox="607 1283 1419 1537" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> </div> <ul style="list-style-type: none"> • Current Location - This is the location of the selected folder. • Folder Name - Enter a new folder name and click to create it. • Type - This identifies the item as a folder or file. • Name - This is the name of the folder/file. <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the Path field. All contents within the specified share are automatically selected.</p> <p>Click Apply to save your settings and Cancel to close the screen.</p>

Table 35 Applications > Download Service > Add

LABEL	DESCRIPTION
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

9.6.2 Configuring General Settings

Click **Applications > Download Service > Preferences** to open the following screen. Use this screen to set the default location for saving downloads and configure the download period.

Figure 92 Applications > Download Service > Preferences > General Settings

The screenshot shows the 'Preferences' dialog box with the 'General Settings' tab selected. The 'BitTorrent' sub-tab is active. Under 'Location of Downloaded Files', there is a table with columns 'Share' and 'Path'. The table contains two rows: 'Put incomplete downloads in' with 'admin' and '/download', and 'Move completed downloads to' with 'public' and '/'. Below the table is an 'Edit' button. A 'Note' section contains three numbered items: 1. BitTorrent jobs are stored in /public/incoming. 2. HTTP/FTP jobs are stored in /public. 3. All jobs triggered by RSS channels create the subfolder in /public using the channel name where it store all files downloaded from that channel. Below the note is the 'Download Period Control' section, which has an unchecked checkbox 'Enable Download Period Control' and a text label 'Download Service is active in the specified time period (hh:mm - hh:mm)'. Below this is a time range selector showing '00:00 - 00:00'. At the bottom of the dialog are 'Apply', 'Reset', and 'Cancel' buttons.

	Share	Path
Put incomplete downloads in	admin	/download
Move completed downloads to	public	/

Note:

1. BitTorrent jobs are stored in /public/incoming.
2. HTTP/FTP jobs are stored in /public.
3. All jobs triggered by RSS channels create the subfolder in /public using the channel name where it store all files downloaded from that channel.

Download Service is active in the specified time period (hh:mm - hh:mm)

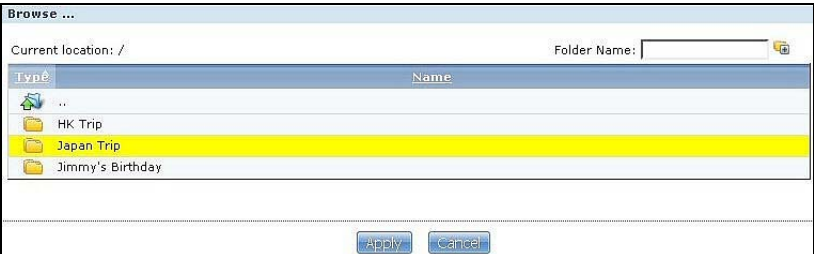

00:00 - 00:00

The following table describes the labels in this screen.

Table 36 Applications > Download Service > Preferences > General Settings

LABEL	DESCRIPTION
Location of Downloaded Files	<p>This shows where the NSA stores new downloads (Put incomplete downloads in) and where the NSA moves completed downloads (Move completed downloads to).</p> <p>The Share column shows the name of the share where the file is downloaded.</p> <p>The Path column points to the location in the share where the NSA will save the downloaded files.</p> <ul style="list-style-type: none"> • BitTorrent jobs are stored in /*/incoming (where '*' is a folder that you have set.) • HTTP/FTP jobs are stored in /* (where '*' is a folder that you have set.) • All jobs triggered by RSS channels create the subfolder in /* using the channel name where it store all files downloaded from that channel (where '*' is a folder that you have set.)
Edit	<p>Click this to open the following screen where you can set the default folder location where you "Put incomplete downloads in" and "Move complete downloads to".:</p> <div data-bbox="764 894 1235 1205" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center; margin: 0;">Edit Location of Downloaded Files</p> <p><input checked="" type="radio"/> Put incomplete downloads in</p> <p>Share: <input type="text" value="admin"/> <input type="button" value="v"/></p> <p>Path: <input type="text" value="/download"/> <input type="button" value="Browse ..."/></p> <p><input checked="" type="radio"/> Move completed downloads to</p> <p>Share: <input type="text" value="public"/> <input type="button" value="v"/></p> <p>Path: <input type="text" value="/"/> <input type="button" value="Browse ..."/></p> <p> Note: All downloaded files will be stored here.</p> <p style="text-align: center; margin-top: 10px;"><input type="button" value="Apply"/> <input type="button" value="Cancel"/></p> </div> <ul style="list-style-type: none"> • Share - Select the share from the list. • Path - Type the folder location in the share directly or click Browse to open the following screen and navigate to the file's location.

Table 36 Applications > Download Service > Preferences > General Settings

LABEL	DESCRIPTION
	 <ul style="list-style-type: none"> • Current Location - This is the location of the selected folder. • Folder Name - Enter a new folder name and click  to create it. • Type - This identifies the item as a file or folder. • Name - This is the name of the folder/file. <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the Path field. All contents within the specified share are automatically selected.</p> <p>Click Apply to save your settings and Cancel to close the screen.</p>
Download Period Control	This feature sets the NSA to download files only within a specified time period.
Enable Download Period Control	Use the check box to turn the download period control on or off.
Download Service is active in the time period (hh:mm - hh:mm)	Specify the time period for the NSA to download files. Note: If you also configured the Power On/Off Schedule feature in the Power Management screen, make sure your active download period does not conflict with the power-off period.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.
Cancel	Click this to return to the previous screen without saving.

9.6.3 Configuring the BitTorrent Settings

Click **Applications > Download Service > Preferences > BitTorrent** to open the following screen. Use this screen to configure BitTorrent settings.

Figure 93 Applications > Download Service > Preferences > BitTorrent

The following table describes the labels in this screen.

Table 37 Applications > Download Service > Preferences > BitTorrent

LABEL	DESCRIPTION
Port Number	Assign a port number for BitTorrent downloads. You can select a number from 2 to 65536. It is recommended to use a port number greater than 1025.
Max. download rate	You may need to limit the bandwidth the NSA uses for BitTorrent downloads if your network's other Internet applications are not getting enough downstream bandwidth. 0 has the NSA impose no restriction.
Max. upload rate	You may need to limit the bandwidth the NSA uses to share files through BitTorrent if your network's other Internet applications are not getting enough upstream bandwidth. 0 has the NSA impose no restriction. If you do not allow any uploads, (for example, you set a limit of 1 KB/s) you will not have a good standing in the BitTorrent community. Note: The settings for maximum download/upload rates would not affect peers accessing the NSA from the same LAN.
Maximum Number of Active Torrents	Specify how many simultaneous BitTorrent downloads are allowed on the NSA. You can enter a number from 1 to 10.
Maximum Number of Seeding Jobs	Specify how many simultaneous seeds are allowed on the NSA. Enter a number from 1 to 10. This value cannot exceed the one you configured in the Maximum Number of Active Torrents field.

Table 37 Applications > Download Service > Preferences > BitTorrent

LABEL	DESCRIPTION
Maximum Number of Active Connections	Specify how many active connections are allowed on the NSA. Enter a number from 1 to 500. This specifies the number of computers that can connect to the NSA to download files being shared by the NSA.
Keep Sharing While	<p>With BitTorrent, the NSA starts sharing a file while you are downloading it. Set how long to continue sharing a file after the NSA finishes the download.</p> <p>Select Upload/Download Ratio to keep sharing a file until the NSA has uploaded a specific percent compared to the download.</p> <p>Select Seeding Time to keep sharing a file for a specific number of minutes after the download finishes.</p> <p>Continuing to share a file helps other BitTorrent users finish downloading it. Sharing out at least as much as you download helps keep you in good standing in the BitTorrent community.</p> <p>Enter -1 to share a file indefinitely. Leave both check boxes blank to have the NSA stop sharing the file as soon as the download finishes.</p> <p>If you select both options, the NSA keeps sharing a file until both conditions exceed the values you configure. For example, you entered 150% in the Upload/Download Ratio field and 120 minutes in the Seeding Time field. The NSA keeps sharing a file until it has shared 1.5 times the size of the file and has passed 120 minutes.</p>
Edit IP Filter	<p>Click this to enable or disable IP filtering for BitTorrent downloads.</p> <p>Refer to Section 9.6.4 on page 201 for information about the fields in this screen.</p>
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.
Cancel	Click this to return to the previous screen without saving.

9.6.4 Edit IP Filter

Use this screen to enable or disable IP filtering for BitTorrent downloads. IP filtering blocks IP addresses known to share fake files. You can either get an IP filter table from a website or use your own table.

Click **Edit IP Filter** in the **Applications > Download Service > Preferences > BitTorrent** screen.

Figure 94 Applications > Download Service > Preferences > BitTorrent > Edit IP Filter

The following table describes the labels in this screen.

Table 38 Applications > Download Service > Preferences > BitTorrent > Edit IP Filter

LABEL	DESCRIPTION
Enable IP Filter	Click this to enable or disable IP filtering for BitTorrent downloads.
Update IP Filter Table File from the Internet Every Week	Select this option and enter a URL to use an online IP filter table. You can find an online IP filter table in websites such as http://www.bluetack.co.uk/config/level1.gz . When you change the URL of the online IP filter table, the NSA also performs an update after you click Apply .
Upload IP Filter Table	Select this option to upload your own IP filter table. Use the Browse button to locate the file and click Upload to save it on the NSA. The NSA supports .txt, .dat, .gz, .tgz, and .tar.gz file extensions. The NSA saves the IP filter table as /admin/download/ipfilter.dat .
Download Current IP Filter Table	Click this to save a copy of the IP filter table on your computer.
Apply	Click Apply to update the IP filter table from the specified URL.
Cancel	Click this to return to the previous screen without saving.

9.6.5 Displaying the Task Information

Select an item on the list and click **Task Info**. Use this screen to check detailed information about the task.

Figure 95 Applications > Download Service > Task Info

Task Info	
Detailed Information	
Status:	Pause
Name:	Christmas Adventure Screensaver (Christmas Adventure Screensaver [mininova].torrent) (BT)
Size:	3.42 MB
Uploaded/Downloaded Ratio:	NaN (0.00 Bytes/0.00 Bytes)
Complete(%):	0.00 %
Seeds:	--
Peers:	--
Download Speed:	--
Upload Speed:	--
Health:	0.000000
Time Left:	--
Priority:	Auto
Comment:	Auto-generated torrent by Mininova
Start Time:	2008-Dec-03 17:11:14
Completed On:	1970-Jan-01 08:00:00
Info-Hash:	52c15b1ba6daa21aac1516145e68c26a2be0c59f
Tracker:	--

The following table describes the labels in this screen.

Table 39 Applications > Download Service > Task Info

LABEL	DESCRIPTION
Status	This is the current status of the task.
Name	This is the name of the task.
Size	This is the size of the file to be downloaded.
Uploaded/ Downloaded Ratio	This is the ratio of total uploaded data to downloaded data.
Complete(%)	This field displays how much has been downloaded to the NSA.
Seeds	This is the number of computers that are sharing the complete file that you are downloading.
Peers	This is the number of other computers that are also downloading (and sharing) the file you are downloading.
Download Speed	This field displays how fast the NSA downloads the file.
Upload Speed	This field displays how fast the NSA uploads the file.
Health	This field displays how many full copies of the file are available for this task. The NSA can download a file with a higher health value more efficiently. If the health value is less than 1 (0.65 for example), there is no full copy of the file, and the NSA may not be able to complete downloading the file.

Table 39 Applications > Download Service > Task Info

LABEL	DESCRIPTION
Time Left	This is the time remaining to complete the task.
Priority	Use this field to set the priority for downloading the task. Select Auto to have the NSA automatically determine the task's priority. Select High to have the NSA download this file before the other files.
Comment	Enter a description for this task. Click Apply to save the description.
Start Time	This field displays when the NSA started to download files.
Completed on	This field displays when the file was successfully downloaded to the NSA.
Info-Hash	This information is used to verify the torrent file.
Tracker	This field displays the tracker that NSA is currently connected to. A tracker is a server used for finding peers sharing the file.
Close	Click this to close the screen.

9.7 The Web Publishing Screen

Use this screen to turn web publishing on or off and select shares to publish. Click **Applications > Web Publishing** to open the following screen.

Figure 96 Applications > Web Publishing

Web Publishing

Disable Web Publishing
 Enable Web Publishing
 Support HTTPS
 Port Number

Note:
 The format of URL: "http://IP_Address:Port_Number/Share_Name/", "https://IP_Address/Share_Name/"

Unpublished Shares
 admin
 music
 photo
 video

Published Shares
 public

The following table describes the labels in this screen.

Table 40 Applications > Web Publishing

LABEL	DESCRIPTION
Web Publishing	
Disable / Enable Web Publishing	Turn on web publishing to let people access files in the published shares using a web browser, without having to log into the Home screens.
Support HTTPS	Select this to allow users to use web browser security for connections to the web-published shares. In order to use secured connections users must use "https://" in the NSA's web address and install the NSA's public key certificate.
Port Number	Specify a port number for accessing the published share websites hosted on the NSA. If you enter a number other than 80, make sure you include it when telling others how to access the web-published share. For example, say you specified port 8080, the NSA's IP address is 192.168.1.23, and the name of the web-published share is FamilyPhotos. You would have to enter "http://192.168.1.23:8080/MyWeb/FamilyPhotos/" in your browser's address bar to access the share's web page.
Unpublished Shares	This list box displays the shares that the NSA does not publish for web browser access.
Publish Selected Share(s)	Select shares in the Unpublished Shares box and click this to let people access files in the published shares using a web browser, without logging into the Home screens. Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.
Published Shares	This list box displays the shares people can access using a web browser, without logging into the Home screens.
Unpublish Selected Share(s)	Select shares in the Published Shares box and click this to not let people access using a web browser without logging into the Home screens. Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

Note: If you installed **php-MySQL-phpMyAdmin** through the **Package Management** screen ([Section 10.4 on page 232](#)) and enable it, you can use PHP and MySQL in your published web page.

9.8 The Broadcatching Screen

This screen displays the NSA's subscribed channels and the associated contents.

- The NSA saves a channel's downloaded items in a folder named after the channel.
- The NSA creates the channel folders in the same destination as the download service. See [Section 9.6.2 on page 197](#) to change the destination for saving downloads.
- The NSA's media server feature makes it easy for users on your network to play the broadcatching files you download. See [Section 9.11.1 on page 217](#) for more on the media server.
- If you add a channel that contains a torrent file, the NSA downloads the torrent file (.torrent) and transfers it to **Download Service** ([Section 9.6 on page 191](#)) and start the BitTorrent download task accordingly.

Click **Applications > Broadcatching** to open the following screen.

Figure 97 Applications > Broadcatching

Broadcatching

Broadcatching has the NSA download frequently updated digital contents like TV programs, radio talk shows, Podcasts (audio files) and blogs with RSS feeds.

Add Channel
 Delete Channel
 Refresh Channel
 Edit Channel

:Start downloading
 :Delete Item

Channel Name	Item Name	Published Date	Description	Actions
C&D Top 10 Podcast	<input checked="" type="checkbox"/> May 13, 2009 (...)	2009-05-13 15:03	Signs you're immature.	
Top 3 Results	<input checked="" type="checkbox"/> May 13, 2009 (...)	2009-05-13 15:02	Signs you're immature.	
	<input checked="" type="checkbox"/> May 13, 2009 (...)	2009-05-13 15:01	Signs you're immature.	
	<input checked="" type="checkbox"/> May 13, 2009 (...)	2009-05-13 15:00	Signs you're immature.	
	<input checked="" type="checkbox"/> May 12, 2009 (...)	2009-05-12 13:41	Signs that you partied too much, too long, too hard.	
	<input checked="" type="checkbox"/> May 12, 2009 (...)	2009-05-12 13:40	Signs that you partied too much, too long, too hard.	
	<input checked="" type="checkbox"/> May 12, 2009 (...)	2009-05-12 13:39	Signs that you partied too much, too long, too hard.	
	<input checked="" type="checkbox"/> May 12, 2009 (...)	2009-05-12 13:38	Signs that you partied too much, too long, too hard.	
	<input checked="" type="checkbox"/> May 11, 2009 (...)	2009-05-11 15:35	Taray quotes.	

The following table describes the labels in this screen.

Table 41 Applications > Broadcatching


LABEL	DESCRIPTION
Add Channel	When you find a channel to subscribe to, copy the URL of the channel's feed and click this button. A screen opens for you to subscribe to the feed. When you are done, the feed's channel and contents display in the Applications > Broadcatching screen.
Delete Channel	Select a channel and click Delete Channel to remove the channel from the NSA. Any of the channel's items that you have already downloaded stay in the channel's folder (in the admin share's download folder).
Refresh Channel	Select a channel and click Refresh Channel to check for new files.
Edit Channel	Select a channel and click Edit Channel to open a screen where you can set the channel's download and delete policies.
	The table lists channels and their files. Click a column's heading to sort the entries by that criteria.
Channel Name	This identifies the channel. A channel displays in red if there was an error the last time the NSA attempted to connect to it. When this happens, you can select the channel and click Refresh Channel to have the NSA reattempt to connect to it. Select a channel to see its available files. A "... " indicates an abbreviated name. Hold your cursor over the name to display the full name.
Item Name	<p>These are the downloadable files. The following icons show the file's status in the NSA.</p>  <p>Completed: The NSA has downloaded the whole file. Double-click the item to go to the Download Service screen where you can see the file's name and location.</p> <p>Seeding: The NSA downloaded the complete file and NSA is sharing it with other BitTorrent users. Double-click the item to go to the Download Service screen.</p> <p>Downloading: The NSA is downloading the file. Double-click the item to go to the Download Service screen.</p> <p>Queued: The file is waiting in line for the NSA to download it. Double-click the item to go to the Download Service screen.</p> <p>Pause: The download has been manually stopped. Double-click the item to go to the Download Service screen.</p> <p>Missing File: The NSA could not find the file.</p> <p>Error: The NSA automatically retries unsuccessful download attempts. The status displays as error when the re-attempts are also unsuccessful and the NSA stops trying to download the file. To try the download again, use the Add button to create a new task.</p> <p>Note: A ... indicates an abbreviated file name. Hold your cursor over the name to display the full name.</p>

Table 41 Applications > Broadcatching

LABEL	DESCRIPTION
Published Date	This is when the file was made available for download.
Description	This is the publishers introduction for the file.
Actions	Start Downloading: Click this to add the file to the NSA's download queue or check the file's status in the NSA's download service. Click the Delete icon to remove the file from the channel's list.

9.8.1 Adding a Broadcatching Channel

At the time of writing, the NSA supports RSS 2.0 feeds. Websites with a feed usually display a feed icon (shown next). Copy and paste the feed's URL into the **Applications > Broadcatching > Add Channel** screen and you can download new files as they are added.

Figure 98 Feed Icon

A channel uses a feed to deliver its contents (items). Subscribe the NSA to a feed to be able to download the contents.

Click **Applications > Broadcatching > Add Channel** to open the following screen. Use the **Add Channel** screen to subscribe the NSA to a channel's feed so you can view the channel. You also select policies for downloading and deleting the channel's items. [Section 4.10 on page 110](#) provides a tutorial on adding a broadcatching channel.

Figure 99 Applications > Broadcatching > Add Channel

Subscribe to Channel Feed

Please enter the url address of the feed you want to subscribe to

Download Policy
Download All Items

Delete Policy
 Manual
 Keep last of items

Location of Downloaded Files

	Share	Path
Put incomplete downloads in	admin	/download
Move completed downloads to	public	/

Edit

Note:

1. BitTorrent jobs are stored in /public/incoming.
2. HTTP/FTP jobs are stored in /public.
3. All jobs triggered by RSS channels create the subfolder in /public using the channel name where it store all files downloaded from that channel.

Apply Cancel

The following table describes the labels in this screen.

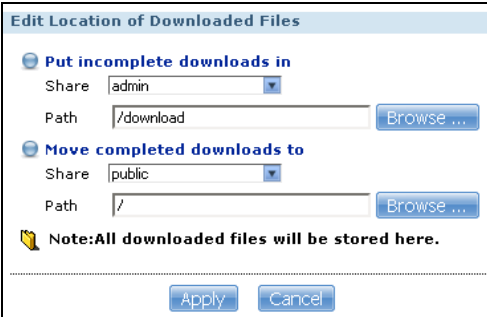
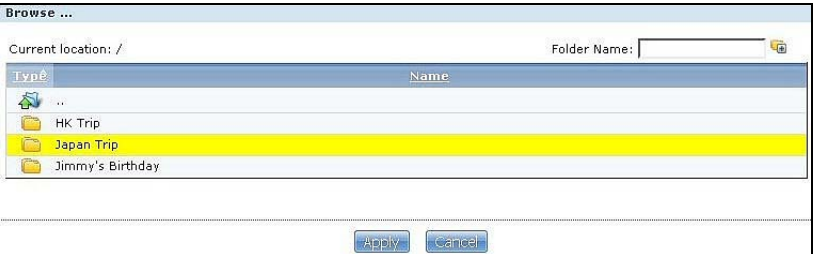

Table 42 Applications > Broadcatching > Add Channel

LABEL	DESCRIPTION
Subscribe to Channel Feed	<p>Paste (or type) the URL of the feed for the channel to which you want to subscribe into this field. This is read-only in the Preferences screen.</p> <p>Note: Make sure the link goes to the actual RSS feed instead of to another list of links or information about the channel.</p> <p>One way to test this is by clicking the link. Clicking an actual RSS feed link opens a screen of XML code (in browsers without an RSS feed aggregator) or a window where you can add the RSS feed (in browsers with an RSS feed aggregator).</p>
Download Policy	<p>Set which of the channel's items the NSA downloads.</p> <p>Download All Items: Download every file in the feed.</p> <p>Download Only New Items: Download new files from today on.</p> <p>Manually Choose Items for Download: Only download individual files you select later in the Broadcatching screen.</p>

Table 42 Applications > Broadcatching > Add Channel

LABEL	DESCRIPTION
Delete Policy	<p>Set how the NSA handles deleting the items downloaded from the channel.</p> <p>Manual: Only delete individual files you select later in the Broadcatching screen.</p> <p>Keep last N of items: Select this to set the NSA to only keep a number of the channel's most recent files. When this number has been reached, if the NSA downloads another file from the channel, it deletes the oldest file from the NSA.</p>
Location of Downloaded Files	<p>This shows where the NSA stores new downloads (Put incomplete downloads in) and where the NSA moves completed downloads (Move completed downloads to).</p> <p>The Share column shows the name of the share where the file is downloaded.</p> <p>The Path column points to the location in the share where the NSA will save the downloaded files.</p> <ul style="list-style-type: none"> • BitTorrent jobs are stored in /*/incoming (where '*' is a folder that you have set.) • HTTP/FTP jobs are stored in /* (where '*' is a folder that you have set.) • All jobs triggered by RSS channels create the subfolder in /* using the channel name where it store all files downloaded from that channel (where '*' is a folder that you have set.)

Table 42 Applications > Broadcatching > Add Channel

LABEL	DESCRIPTION
Edit	<p>Click this to open the following screen where you can set the default folder location where you “Put incomplete downloads in” and “Move complete downloads to”:</p>  <ul style="list-style-type: none"> • Share - Select the share from the list. • Path - Type the folder location in the share directly or click Browse to open the following screen and navigate to the file's location.  <ul style="list-style-type: none"> • Current Location - This is the location of the selected folder. • Folder Name - Enter a new folder name and click  to create it. • Type - This identifies the item as a file or folder. • Name - This is the name of the folder/file. <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the Path field. All contents within the specified share are automatically selected.</p> <p>Click Apply to save your settings and Cancel to close the screen.</p>
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

9.8.2 Editing a Broadcatching Channel

Click **Applications > Broadcatching**, then select a channel and click **Edit Channel** to open a similar **Edit** screen. Use the **Edit Channel** screen to change the download or delete policies.

Figure 100 Applications > Broadcatching > Edit Channel

Settings

Channel Name: http://feeds.themerlinshow.c...

URL: http://feeds.themerlinshow.com/TheMerlinShow

Download Policy: Download All Items

Delete Policy: Manual
 Keep last of items

Location of Downloaded Files

	Share	Path
Put incomplete downloads in	admin	/download
Move completed downloads to	public	/

Note:

1. BitTorrent jobs are stored in /public/incoming.
2. HTTP/FTP jobs are stored in /public.
3. All jobs triggered by RSS channels create the subfolder in /public using the channel name where it store all files downloaded from that channel.

Buttons: Apply, Reset, Cancel

The following table describes the labels in this screen.

Table 43 Applications > Broadcatching > Edit Channel

LABEL	DESCRIPTION
Channel Name	This is the name of the feed for the channel to which you want to subscribe into this field. This is read-only.
URL	This is the address of the channel.
Download Policy	Set which of the channel's items the NSA downloads. Download All Items: Download every file in the feed. Download Only New Items: Download new files from today on. Manually Choose Items for Download: Only download individual files you select later in the Broadcatching screen.
Delete Policy	Set how the NSA handles deleting the items downloaded from the channel. Manual: Only delete individual files you select later in the Broadcatching screen. Keep last N of items: Select this to set the NSA to only keep a number of the channel's most recent files. When this number has been reached, if the NSA downloads another file from the channel, it deletes the oldest file from the NSA.

Table 43 Applications > Broadcatching > Edit Channel

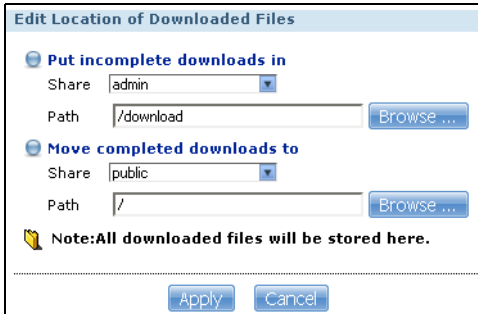
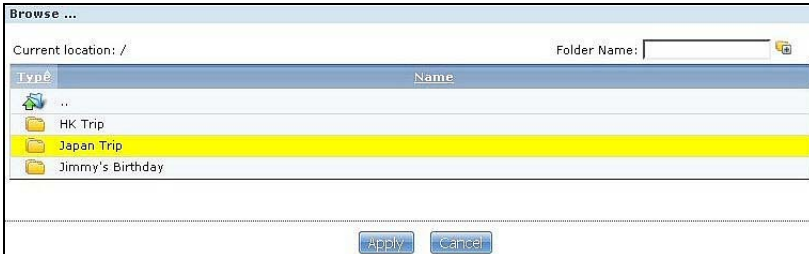

LABEL	DESCRIPTION
Location of Downloaded Files	<p>This shows where the NSA stores new downloads (Put incomplete downloads in) and where the NSA moves completed downloads (Move completed downloads to).</p> <p>The Share column shows the name of the share where the file is downloaded.</p> <p>The Path column points to the location in the share where the NSA will save the downloaded files.</p> <ul style="list-style-type: none"> • BitTorrent jobs are stored in /*/incoming (where '*' is a folder that you have set.) • HTTP/FTP jobs are stored in /* (where '*' is a folder that you have set.) • All jobs triggered by RSS channels create the subfolder in /* using the channel name where it store all files downloaded from that channel (where '*' is a folder that you have set.)
Edit	<p>Click this to open the following screen where you can set the default folder location where you "Put incomplete downloads in" and "Move complete downloads to":.</p> <div data-bbox="760 835 1235 1146" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  </div> <ul style="list-style-type: none"> • Share - Select the share from the list. • Path - Type the folder location in the share directly or click Browse to open the following screen and navigate to the file's location. <div data-bbox="621 1283 1425 1535" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  </div> <ul style="list-style-type: none"> • Current Location - This is the location of the selected folder. • Folder Name - Enter a new folder name and click  to create it. • Type - This identifies the item as a file or folder. • Name - This is the name of the folder/file. <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the Path field. All contents within the specified share are automatically selected.</p> <p>Click Apply to save your settings and Cancel to close the screen.</p>

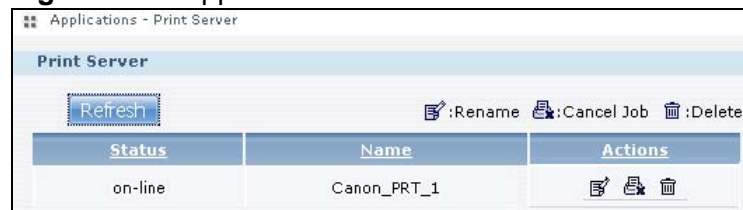
Table 43 Applications > Broadcastching > Edit Channel

LABEL	DESCRIPTION
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

9.9 The Print Server Screen

Use the **Print Server** screen to view and manage the NSA's list of printers and print jobs.

Click **Applications > Print Server** to open the following screen.

Figure 101 Applications > Print Server

The following table describes the labels in this screen.

Table 44 Applications > Print Server

LABEL	DESCRIPTION
Refresh	Click this to update the list of printers and print jobs.
	The table lists printers and their queued print jobs. Click a column's heading to sort the entries by that criteria.
Status	This field shows whether the printer is connected and turned on (on-line) or not (off-line).
Name	This identifies the printer. Each printer connected to the NSA must use a unique name.
Actions	<p>Rename: Click this to change the name the NSA uses for the printer.</p> <p>Cancel Job: Click this to remove all print jobs from the NSA queue for a particular printer. However, since the NSA sends print jobs to the printer as soon as it can, this button may only have an effect if there are very large or many print jobs in the queue. To stop a print job that has already started, you may have to turn off the printer.</p> <p>Delete: Click this to remove a printer from the NSA's printer list. To add the printer back into the list, disconnect the printer from the NSA's USB port and reconnect it. If that does not work, disconnect the USB port and turn off the printer's power. Then reconnect the printer and turn it back on.</p>

9.9.1 Print Server Rename

Click **Applications > Print Server** and a printer's **Rename** icon to open the following screen. Use this screen to change the name the NSA uses for the printer.

Figure 102 Applications > Print Server > Rename

The following table describes the labels in this screen.

Table 45 Applications > Print Server > Rename

LABEL	DESCRIPTION
Name	Type a new name to identify the printer. The name must be unique from all the other names of printers connected to the NSA.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

9.10 The Copy/Sync Button Screen

The **Copy/Sync** button on the front panel allows you to copy or synchronize files between a connected USB device and the NSA.

Click **Applications > Copy/Sync Button** to open the following screen.

Figure 103 Applications > Copy/Sync Button

The following table describes the labels in this screen.

Table 46 Applications > Copy/Sync Button

LABEL	DESCRIPTION
Copy Settings	
NSA Copy Target	Select the NSA share to use with the copy function.
USB Volume	If your USB device has multiple partitions, select which partition to use with the copy function.
Copy Direction	Select USB -> NSA to copy files from your USB device to the NSA. Select NSA -> USB to copy files from the NSA to your USB device.
Create a New Folder for Copied Files	Select this option to place the copied files in a new folder. The name of the folder created for the copied files consists of the date and time of the copy in year_month_day_hour_minute_second format.
Backup Files to be Replaced	This option is only available if you do not select Create a New Folder for Copied Files . Select this option to save the files that will be replaced by the source files.

Table 46 Applications > Copy/Sync Button

LABEL	DESCRIPTION
Backup Target	Select a share in which to save the backup files. Note: The NSA will not create a new folder to store the backup files. It is recommended to create a specific share (such as “backup”) for backup purposes.
Sync Settings	
NSA Sync Target	Select the NSA share to use with the synchronization function.
USB Volume	If your USB device has multiple partitions, select which partition to use with the synchronization function.
Sync Direction	Select USB -> NSA to synchronize files from your USB device to the NSA. Select NSA -> USB to synchronize files from the NSA to your USB device. Select NSA <-> USB to synchronize files in both directions simultaneously.
Backup Files to be Replaced or Removed	Select this option to save the files that will be replaced by the source files.
Backup Target	Select a share in which to save the backup files. Note: The NSA will not create a new folder to store the backup files. It is recommended to create a specific share (such as “backup”) for backup purposes.
Apply	Click this to save your changes. The configuration file is saved on the USB device.
Reset	Click this to restore your previously saved settings.

9.11 Technical Reference

This section provides technical background information on the topics discussed in this chapter.

9.11.1 Sharing Media Files on Your Network

The media server feature lets anyone on your network play video, music, and photos from the NSA (without having to copy them to another computer). The NSA can function as a DLNA-compliant media server and/or an iTunes server. The NSA streams files to DLNA-compliant media clients or computers using iTunes. The Digital Living Network Alliance (DLNA) is a group of personal computer and

electronics companies that works to make products compatible in a home network.

- Publish shares to let others play the contained media files.
- The media server is a convenient way to share files you download using the broadcast service (see [Section 9.8 on page 206](#)).
- Hardware-based media clients like the DMA-2500 can also play the files. See [Section 18.4 on page 380](#) for the supported multimedia file formats.

Note: Anyone on your network can play the media files in the published shares. No user name and password or other form of security is used. The media server is enabled by default with the video, photo, and music shares published.

Songs from the iTunes Store

After using iTunes on your computer to download songs from Apple's iTunes Store, you can copy them to the NSA. Many of these songs have DRM (Digital Rights Management). At the time of writing, you can use your Apple account ID and password to authorize up to a total of five computers to play the files. To authorize a computer, open iTunes and click **Store > Authorize Computer**.

A link for the NSA in iTunes under **SHARED**. Click it to display the NSA's published media files as shown next.

Figure 104 NSA link in iTunes



9.11.2 Download Service

The NSA's download service downloads files from the Internet directly to the NSA. You do not have to download to your computer and then copy to the NSA. This can free up your computer's system resources. The download service also handles your broadcatching downloads. See [Section 9.8 on page 206](#) for information on broadcatching.

The NSA can download using these protocols.

- HTTP: The standard protocol for web pages.
- FTP: A standard Internet file transfer service.
- BitTorrent: A popular distributed peer-to-peer files sharing protocol.

Note: Do not use the NSA for illegal purposes. Illegal downloading or sharing of files can result in severe civil and criminal penalties. You are subject to the restrictions of copyright laws and any other applicable laws and will bear the consequences of any infringements thereof. ZyXEL bears NO responsibility or liability for your use of the download service feature.

Torrent Files

The NSA needs a ".torrent" file for BitTorrent to download a file. The torrent file gives the NSA information about the file to be downloaded (and shared) and the tracker(s) (computers) that coordinates the distribution of the file.

When you add a BitTorrent download task in the NSA's web configurator screens, you can copy and paste the URL of the torrent file. The NSA automatically downloads the torrent file and saves it in a **torrent** folder within the folder where the NSA stores downloaded files (the **admin** share's **download** folder by default).

If you already have the torrent file saved on your computer, you can just specify its location when adding a download task through the web configurator. Another method is to use FTP or a CIFS program (Windows Explorer for example) to copy the torrent file into the **torrent** folder. The NSA automatically uses the torrent file.

After your BitTorrent download and sharing are finished, you can go to the **incoming** folder within the destination share or folder and delete the .torrent file if you need to free up hard disk space.

9.11.3 Link Capture Browser Plugin

The link capture browser plugin is an add-on feature for your web browser. Use the plugin to directly add a file's URL to the NSA's download service.

Note: The link capture browser plugin is located in the included CD.

The following screen displays how the plugin works.

Figure 105 Link Capture Browser Plugin



Instead of copying and pasting a file's URL to the NSA's download service, you can right-click on the URL in the web browser and select **Send to NSA**. The URL is then added to the NSA's download service list.

See [Section 4.9.2 on page 97](#) and [Section 4.9.3 on page 102](#) for tutorials about installing and using the link capture browser plugin.

Note: At the time of writing the plugin supports Internet Explorer 6.0/7.0/8.0 and Mozilla Firefox 2.0/3.0.

9.11.4 Download Service Notification

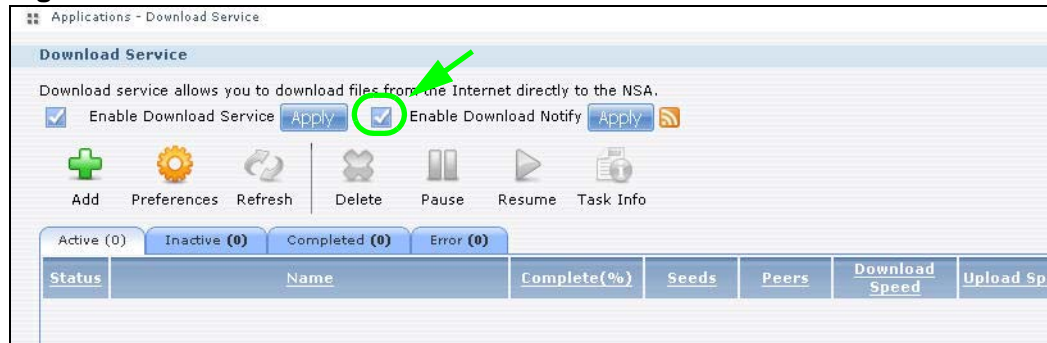
Use the download service notification to keep track of downloaded files on the NSA. You can subscribe to the NSA's download list on your computer. When the NSA finishes downloading new files, your RSS reader displays the information and links for the files. You can also download the files from the RSS reader to your computer.

See [Section 4.9.5 on page 106](#) for a tutorial about using the download service notification.

In the **Download Service** screen, select **Enable Download Notify** and click **Apply**. An RSS feed icon appears. Click the icon to subscribe to the NSA's download list.

Note: The download service notification only keeps track of files downloaded via BitTorrent.

Figure 106 Download Service Notification



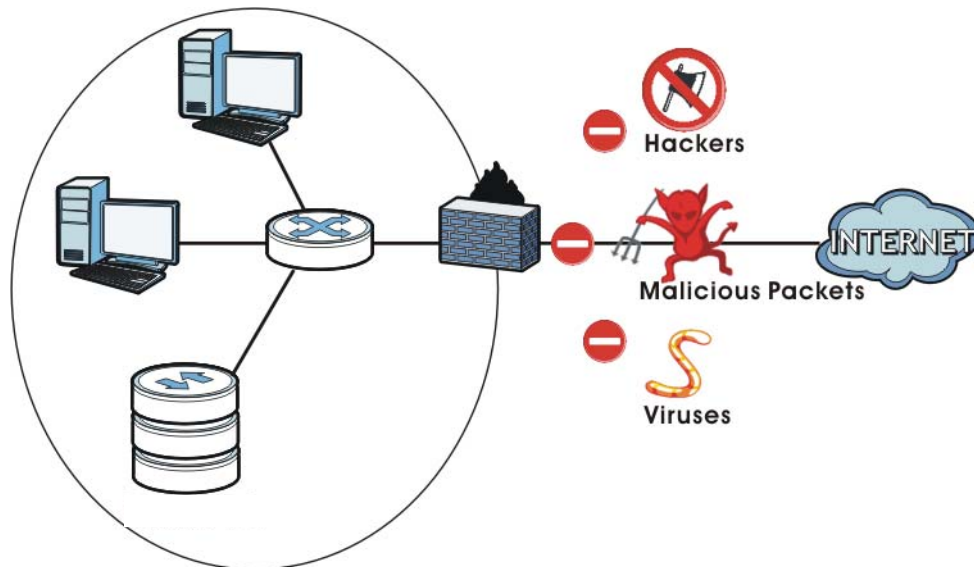
9.11.5 BitTorrent Security

When you download using BitTorrent, you reveal your IP address. This increases the risk of hacking attacks, which can be protected against by a good firewall.

Use a Hardware-based Firewall

Place a hardware-based firewall between your network and the Internet (a software-based firewall on your computer would just protect the computer itself, not the NSA since your computer is not between your NSA and the Internet).

Figure 107 Firewall



Ideally your firewall should have the following:

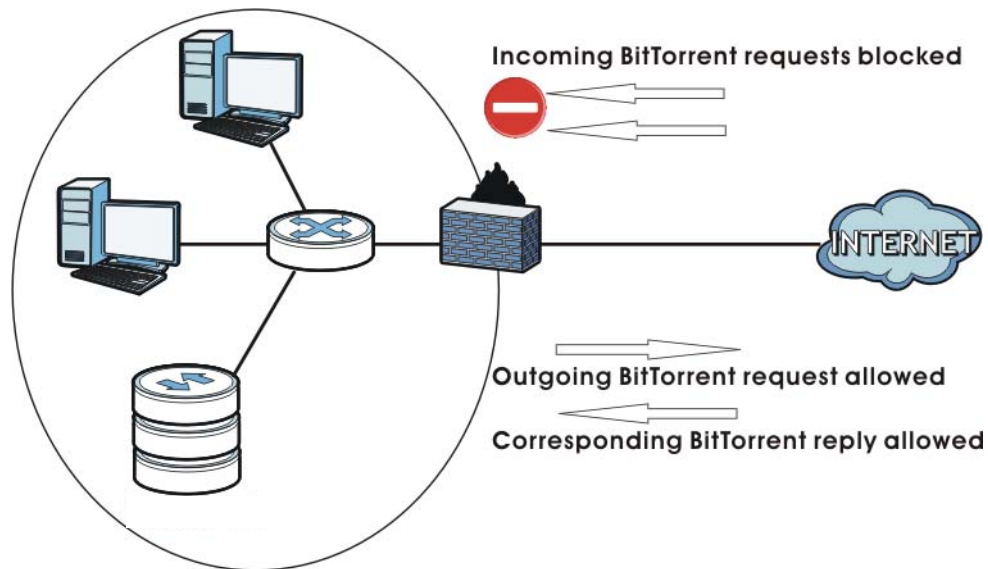
- Stateful packet inspection to control access between the Internet and your network and protect your NSA (and computers) from hacking attacks.
- IDP (Intrusion Detection and Prevention) to detect malicious packets within normal network traffic and take immediate action against them.
- Anti-virus to check files you download for computer viruses.

BitTorrent and Your Firewall

The anti-virus feature on a firewall probably cannot check BitTorrent downloads for viruses, so use anti-virus software on your computer to scan the NSA for viruses.

When you download using BitTorrent, many other BitTorrent users are also trying to download the file from you. The firewall slows this down because by default, it only allows traffic from the Internet in response to a request that originated on the LAN (it lets you get files from the Internet and blocks those on the Internet from getting files from you).

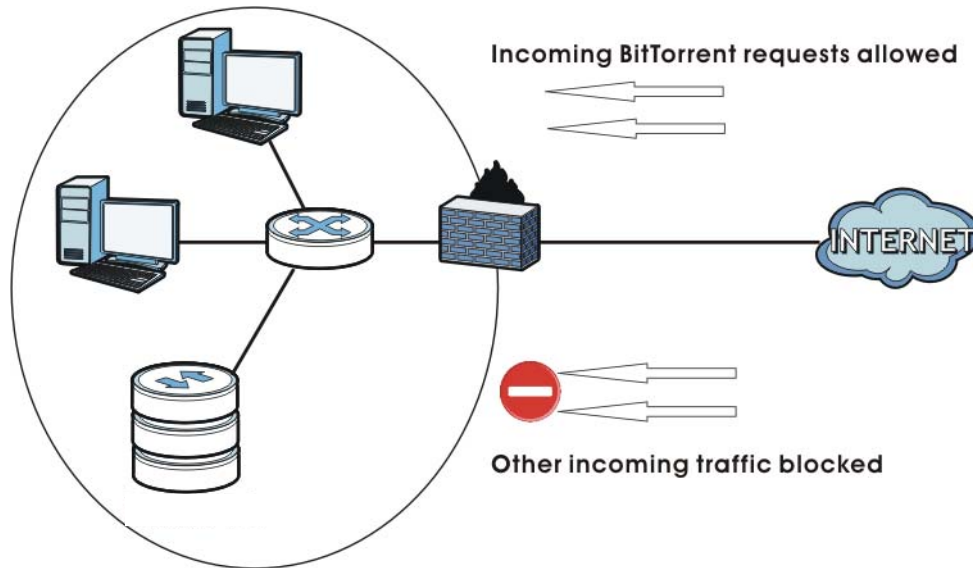
Figure 108 Firewall Blocking Incoming BitTorrent Requests



To speed up BitTorrent file transfers, configure your firewall's port forwarding to send incoming TCP port 9090 and UDP port 9089 connections to the NSA. You probably need to use your firewall's HTML (web-based) configuration interface to

set this up (see the firewall's manual for details). You may also have to configure a corresponding firewall rule.

Figure 109 Firewall Configured to Allow Incoming BitTorrent Requests

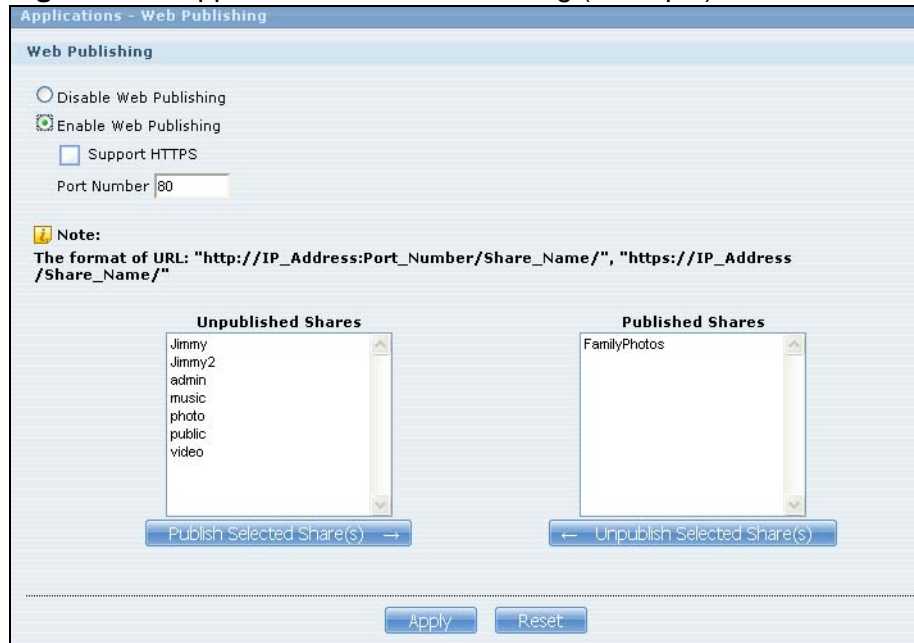


9.11.6 Web Publishing Example

This example covers how to configure the **Web Publishing** screen to let people use a web browser to access a share named FamilyPhotos without logging into the **Home** screens and shows how to access the share through the Internet.

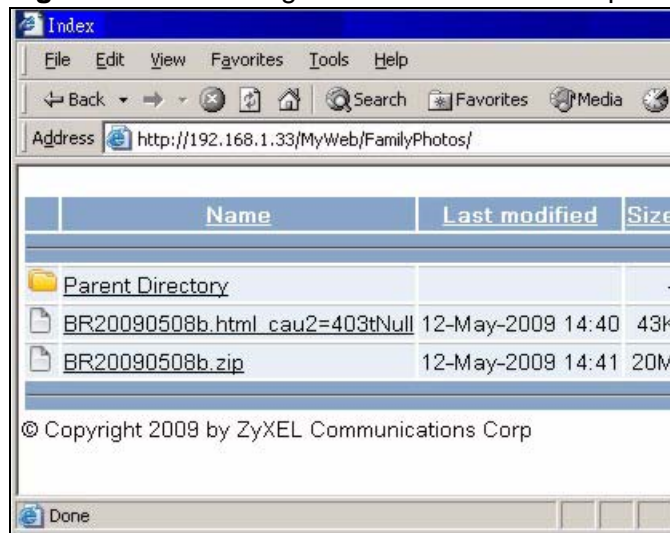
- 1 Click **Applications > Web Publishing** and configure the screen as shown (enable the web publishing and move **FamilyPhotos** over to **Published Shares**) and click **Apply**.

Figure 110 Applications > Web Publishing (Example)



- 2 Now open your web browser and type in the address of the NSA's FamilyPhotos web page. In this example, the NSA's IP address is 192.168.1.33, and the name of the web-published share is FamilyPhotos. So you would enter "http://192.168.1.33/MyWeb/FamilyPhotos/" in your browser's address bar. Then press [ENTER] or click **Go**. A screen displays listing the share's files.

Figure 111 Browsing to an NSA Share Example



- Click a file's link to open the file.
- Right-click a file's link and select **Save Target As..** (in Internet Explorer) to save a copy of the file.
- Click a label in the heading row to sort the files by that criteria.
- To customize how the page looks and works, create an index.html or index.htm file and store it in the share.

9.11.7 Web Publishing

Web publishing lets you “publish” shares (containing folders and files) on the NSA so people can access the files using a web browser without having to log into the **Home** screens. This way you can share files with others without them having to know and enter a user name and password.

For example, if you want to share photos in a FamilyPhotos share, you could “web publish” it and others could use a web browser to access the photos at `http://my-NSA's-IP-Address/MyWeb/FamilyPhotos`.

Note: The NSA does not use any security for the files in the published folders. It is not recommended to publish shares if you do not have the NSA behind a good hardware-based firewall. See [page 221](#) for more on firewalls.

Additionally, you can use HTML editing software (not included) to create an index.html or index.htm file to define and customize how your website works and looks.

Accessing Web-published Shares from the Internet

You need to use a public address to access the NSA's web-published shares from the Internet. If your NSA uses a private IP address, you may need to use the public IP address of your Internet gateway and configure NAT or port forwarding on your Internet gateway and possibly firewall rules in order to let people access the NSA's web-published shares from the Internet.

Web Publishing Port Number

If the web-published shares use a port number other than 80 (the normal port for web traffic), users must include it after the NSA's IP address in order to access the NSA's web-published shares. For example, say you specified port 8080, the NSA's IP address is 192.168.1.23, and the name of the web-published share is FamilyPhotos. You would have to enter “`http://192.168.1.23:8080/MyWeb/FamilyPhotos/`” in your browser's address bar to access the share's web page.

The NSA's web configurator uses port 80. To make the web configurator more secure, you can have the web-published shares use another port number. Then you can configure one set of firewall rules and NAT or port forwarding settings on

your Internet gateway specifically for allowing access to the web-published shares and another separate set of rules for accessing the NSA's web configurator.

9.11.8 Channel Guides for Broadcatching

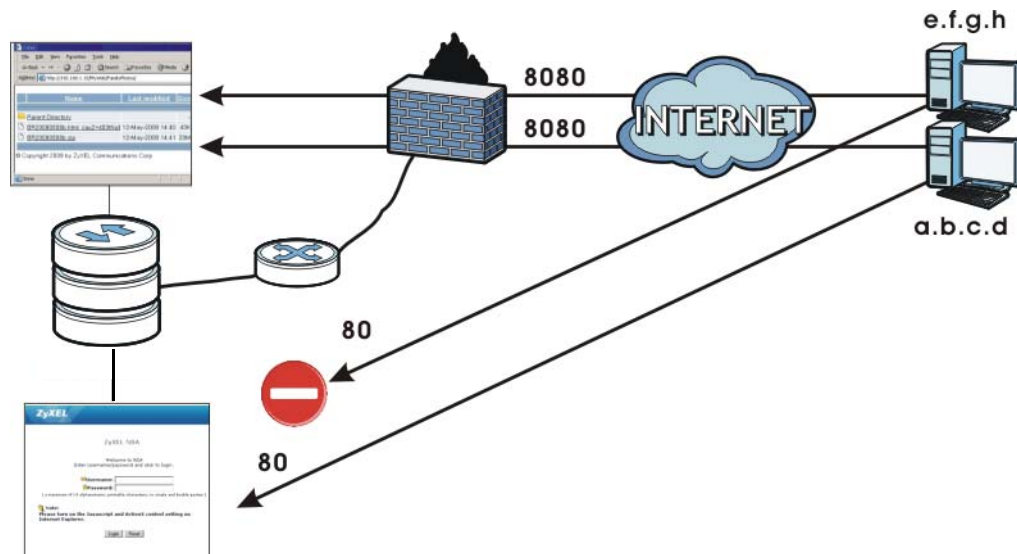
Here are some popular broadcatching channel guide web sites.

Note: ZyXEL does not endorse these web sites and is not responsible for any of their contents. Use these or any other web sites at your own risk and discretion.

- <http://www.zencast.com/>
- <http://www.miroguide.com/>
- <http://www.vuze.com/>
- <http://www.mefedia.com/>
- <http://www.vodstock.com/>
- <http://www.mininova.org>

In the following example, the Internet gateway's firewall is configured to allow anyone to access the NSA's web-published screens using port 8080. Web configurator access (port 80) however, is only allowed from IP address a.b.c.d.

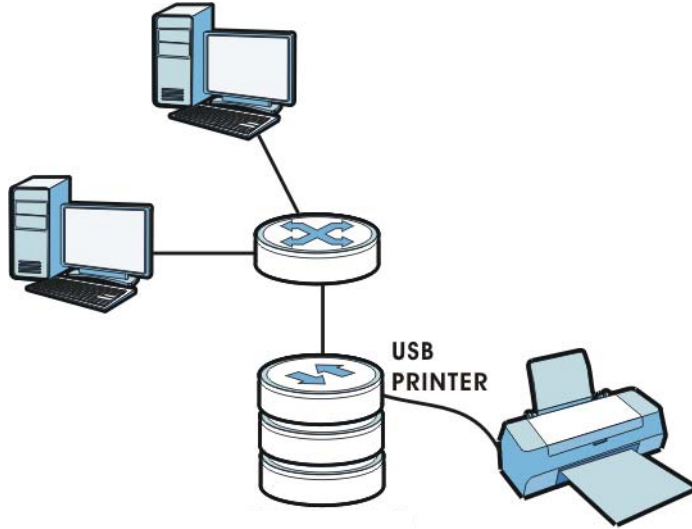
Figure 112 Web Publishing Port Number Example



9.11.9 Printer Sharing

The NSA can act as a print server. A print server lets multiple computers share a printer. Connect a printer to the NSA's USB port to let multiple computers on your network use it. See www.zyxel.com for a list of compatible printers.

Figure 113 Printer Sharing



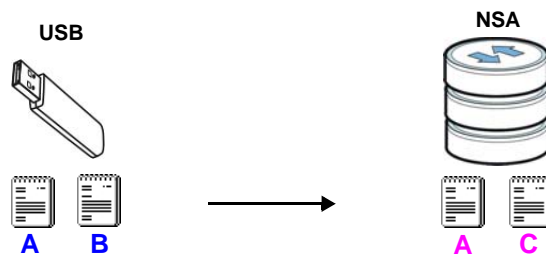
9.11.10 Copying Files

You can copy files from a USB device to the NSA or from the NSA to a USB device. Simply press and release the **COPY/SYNC** button to start copying files. See [Section 9.10 on page 216](#) for details about configuring the copy settings.

The following figure illustrates how copying files works when you copy files from a USB device to the NSA. The same concept applies when you copy files from the NSA to a USB device.

Figure 114 Copying Files Example

Before Copy



After Copy



Both storage devices contain file A.

- A copy of files A and B from the USB device is transferred to the NSA.
- File A from the USB device replaces file A on the NSA.

9.11.11 Synchronizing Files

Synchronization makes the contents on the target device identical to the ones on the source device. You can synchronize files from a USB device to the NSA or from the NSA to a USB device. In addition, you may also synchronize files in both directions simultaneously.

Press and hold the **COPY/SYNC** button until you hear a beep to synchronize files. See [Section 9.10 on page 216](#) for details about configuring the synchronization settings.

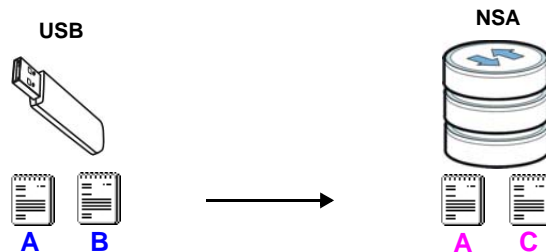
USB -> NSA or USB <- NSA

When you synchronize files in one direction, contents on the source device replace the files on the target device.

The following figure illustrates how synchronization works when you synchronize files from a USB device to the NSA. The same concept applies when you synchronize files from the NSA to a USB device.

Figure 115 Synchronizing Files Example 1

Before Sync



After Sync



Both storage devices contain A.

- A copy of files A and B from the USB device is transferred to the NSA.
- File A from the USB device replaces file A on the NSA.
- File C on the NSA is deleted.

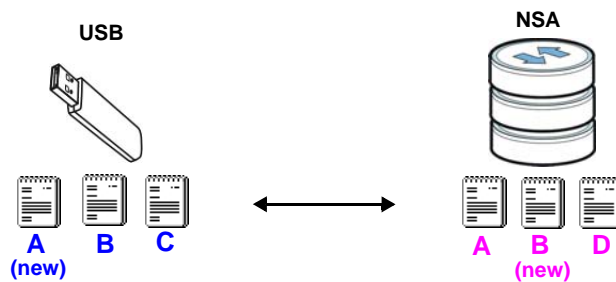
USB <-> NSA

When you synchronize files in both directions simultaneously, both storage devices transfer unique files to one another. Files with the same file name are synchronized according to their modification date/time. The difference in modification time between the two files has to be greater than five minutes. More recently modified files overwrite the older ones during synchronization.

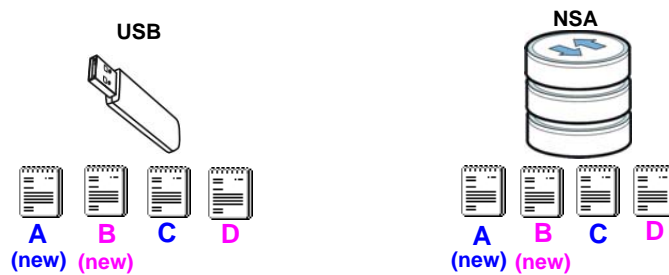
The following figure illustrates how synchronization works when you synchronize files in both directions simultaneously.

Figure 116 Synchronizing Files Example 2

Before Sync



After Sync



A on the USB device and B on the NSA are modified more recently.

- File A from the USB device replaces file A on the NSA.
- File B from the NSA replaces file B on the USB device.
- A copy of file C from the USB device is transferred to the NSA.
- A copy of file D from the NSA is transferred to the USB device.

Package Management

10.1 Overview

Package Management can be used to set up more useful applications in your NSA. The NSA can download multiple packages/files at once and automatically goes through all the installation steps.

10.2 What You Can Do

- Use the **Package Management** screen ([Section 10.4 on page 232](#)) to download and install applications from the web.
- Use the **eMule** screens ([Section 10.5 on page 236](#)) to configure the server, task and search settings for the eMule application.
- Use the **DyDNS** screen ([Section 10.6 on page 252](#)) to configure the domain name settings of your NSA.
- Use the **NFS** screen ([Section 10.7 on page 253](#)) to configure the Network File System (NFS) settings of your NSA.
- Use the **SMART** screens ([Section 10.8 on page 257](#)) to view your NSA hard disk(s) statistics and monitor their performance.
- Use the **Protect** screens ([Section 10.9 on page 261](#)) to configure and schedule the backup and restore jobs of your NSA.

10.3 What You Need to Know

This feature enables you to use the following applications:

- **eMule** - eMule is an open-source peer-to-peer (P2P) file-sharing application similar to eDonkey, which can be used to download files from the Internet. It uses the Kad protocol.
- **DyDNS** - This gives your NSA a domain name with a dynamic IP address. At the time of writing, this package supports accounts from the following service providers: DynDNS, NoIP, 3322, ZoneEdit, and DHS.

- **Gallery** - This web-based application allows your NSA to host pictures. You can upload images in your local computer or shares to this application. Use the administrator account of your NSA to log in to the Gallery console. The administrator can then create accounts for other users.
- **NFS** - NFS (Network File System) is a file-sharing protocol most commonly implemented on Unix-like systems.
- **PHP-MySQL-phpMyAdmin** - This tool can be used to manage MySQL through the web. Enter 'root' as the username and '1234' as the password to log in. This includes MySQL 5.1.30, PHP 5.2.8 and phpMyAdmin 3.1.1.
- **SMART** - Use S.M.A.R.T. (Self Monitoring, Analysis, and Reporting Technology) to monitor hard disks. It detects and reports the reliability of hard disks using standard indicators, enabling administrators to anticipate possible disk failures.
- **SqueezeCenter** - This enables you to manage a Logitech's Squeezebox device connected to the NSA.
- **Wordpress** - This allows you to create and manage a blog. Use the NSA administrator credentials to log in. The administrator can then create accounts for other users.
- **BackupPlanner** - Use this to schedule and run backup jobs for files stored in your NSA to an internal drive, external storage device or to another NSA in the network.

The following applications come with their own web configurator and documentation:

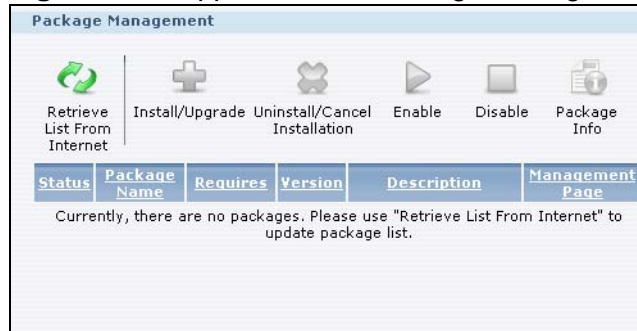
- Gallery
- PHP-MySQL-phpMyAdmin
- SqueezeCenter
- WordPress

10.4 Package Management Screen

Use this screen to download and install applications from the web.

Click **Applications > Package Management** to open the following screen.

Figure 117 Applications > Package Management




The following table describes the labels in this screen.

Table 47 Applications > Package Management

LABEL	DESCRIPTION
Package Management	
Retrieve List From Internet	Click this to retrieve a list of available packages from the ZyXEL website.
Install/Upgrade	Choose the item(s) on the list and click this to install the selected application(s) on your system or upgrade to the latest version if you have previously installed the application.
Uninstall/Cancel Installation	Choose the item(s) on the list and click this to uninstall the selected application(s) from your system or cancel their active download(s) or install process/es. This is only available if you have previously installed the package.
Enable	This option is only for non built-in packages. Choose the item(s) on the list and click this to enable the application(s) on your system. This is only available if you have previously installed the package.
Disable	This option is only for non built-in packages. Choose the item(s) on the list and click this to disable the application on your system. You have to enable the application again in order to use it. This is only available if you have previously installed the package.
Package Info	Select an item on the list and click this to display information about the package. See Section 10.4.1 on page 235 for more details.

Table 47 Applications > Package Management

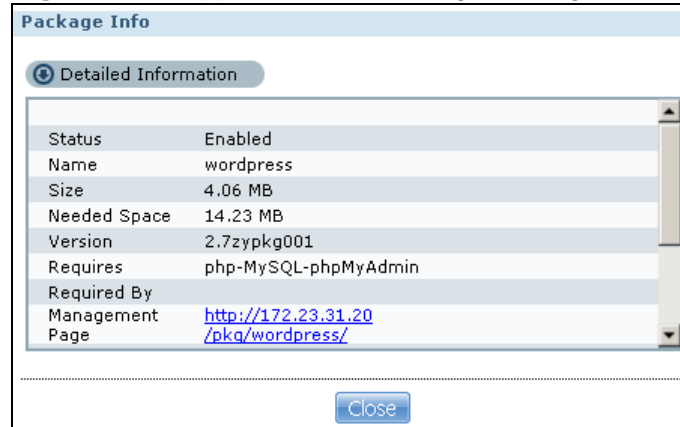
LABEL	DESCRIPTION
Status	<p>This is the current status of the application. It shows:</p> <ul style="list-style-type: none"> • Not Installed - This displays for applications that have not been installed by the NSA. • Installing (%) - This displays when the application is being installed. It also shows the percent of the package already installed. • Built-in - This displays for applications installed by the NSA that you can configure in the NSA Web Configurator. • Enabled - This displays for applications installed and enabled by the NSA that have their own web configurators. • Disabled - This displays for applications installed and disabled by the NSA that have their own web configurators. • Unknown - It is possible to get this status if the web location for the application is unavailable.
Package Name	This is the name of the application.
Requires	<p>This shows the other packages required in order to run this application.</p> <p>Note: A package would be disabled/enabled simultaneously if its prerequisite package(s) has been disabled/enabled. For example, when you enable WordPress, this also enables PHP-MySQL-phpMyAdmin automatically. However when you enable PHP-MySQL-phpMyAdmin, this does not automatically enable WordPress.</p>
Version	<p>This is the version number of the item.</p> <p>The  icon indicates that the application has a newer version available. Move your mouse over this icon to see the latest version number. Choose this item and click Install/Upgrade.</p>
Description	This shows a brief description of the application.
Management Page	This shows the location of the screens or web configurator where you can manage the application (after the package has been installed on the system).

Note: Once you install an application and enable it, additional links show up in the navigation panel. This applies to **eMule**, **DyDNS**, **NFS**, **SMART** and **BackupPlanner**. For **Gallery**, **PHP-MySQL-phpMyAdmin**, **SqueezeCenter** and **WordPress**, you can access the applications' web configurators through the **Package Management** screen.

10.4.1 Displaying the Package Information

Select an item on the list and click **Package Info**. Use this screen to check detailed information about the task.

Figure 118 Applications > Package Management > Package Info



The following table describes the labels in this screen.

Table 48 Applications > Package Management > Package Info

LABEL	DESCRIPTION
Status	This is the current status of the application. It shows: <ul style="list-style-type: none"> • Not Installed - This displays for applications that have not been installed by the NSA. • Installing (%) - This displays when the application is being installed. It also shows the percent of the package already installed. • Built-in - This displays for applications installed by the NSA that you can configure in the NSA Web Configurator. • Enabled - This displays for applications installed and enabled by the NSA that have their own web configurators. • Disabled - This displays for applications installed and disabled by the NSA that have their own web configurators.
Name	This is the name of the application.
Size	This is the size of the application at initial download.
Needed Space	This is the needed space to complete the installation of the application.
Version	This is the version number of the application.
Requires	This shows other package/s required to run this application.
Required By	This shows which other packages require this application in order to be usable.
Management Page	This shows the location of the screens, console or web configurator where you can manage the application (after the package has been installed on the system).
Source	This shows the location of the installed files of the application.

Table 48 Applications > Package Management > Package Info

LABEL	DESCRIPTION
Description	This shows a brief description of the item.
Close	Click this to close the screen.

10.5 eMule Screens

Use these screens to manage the eMule application in your NSA. eMule is a peer-to-peer (P2P) file-sharing console that lets you download files from the Internet. It works with eDonkey and Kad networks.

10.5.1 eMule Server Screen

Use this screen to configure the eMule server.

Click **Applications > eMule > Server** to open the following screen.

Figure 119 Applications > eMule > Server

Status	IP Address	Port Number	Name	Response	Number of Current Users	Max. User Number	Number of Files
Not connected	89.248.172.86	4500	Sharing Kingdom 3	312 ms	226.77 K	350 K	17.08 M
Not connected	89.248.172.50	4500	Sharing Kingdom 2	360 ms	140.84 K	350 K	10.89 M
Connecting	88.191.81.111	1111	PEERATES.NET	468 ms	68.30 K	250 K	13.43 K
Not connected	89.248.172.90	4500	Sharing Kingdom 4	469 ms	120.23 K	350 K	10.19 M

The following table describes the labels in this screen.

Table 49 Applications > eMule > Server

LABEL	DESCRIPTION
Server	You can add multiple servers in this screen. However, the NSA can only connect to one eMule server at a time.
Enable eMule	Check this and click Apply to enable the eMule application.
Add Server	Click this to add an eMule server. A server provides a list of available files for download, users sharing them and other information. Refer to Section 10.5.2 on page 237 for the Add Server screen.

Table 49 Applications > eMule > Server

LABEL	DESCRIPTION
My Info	Select a server from the list and click this to view the details and connection status of the server. Refer to Section 10.5.4 on page 239 for the My Info screen.
Connect	Click this to connect to the selected server or a random server if no server is selected.
Disconnect	Select a server from the list and click this to disconnect from the server.
Edit Server	Select a server from the list and click this to edit the server's information, including the server name and IP address. Refer to Section 10.5.3 on page 238 for the Edit Server screen.
Delete Selected Server(s)	Select the server(s) from the list and click this to delete the server(s) from the list.
The table lists your servers. Click a column's heading to sort the entries by that criteria.	
Status	This shows the status of the NSA's connection to the server: Connected, Connecting or Not Connected .
IP Address	This shows the IP address of the server.
Port Number	This shows the port number used by the server for file-sharing.
Name	This shows the name of the server.
Response	This shows the length of time (in milliseconds) that the server took to reply to the NSA.
Number of Current Users	This shows the number of users currently connected to the server.
Max. User Number	This shows the total number of users that can connect to the server at the same time.
Number of Files	This shows the number of files available for download in the server.

You see a warning screen before you delete a server.

Figure 120 Delete a Server

10.5.2 Add Server

Use this screen to add a server for the eMule application.

Click **Add** in the **Applications > eMule > Server** screen to add a server.

Figure 121 Applications > eMule > Server: Add

The following table describes the labels in this screen.

Table 50 Applications > eMule > Server: Add

LABEL	DESCRIPTION
Server IP	Select this if you know the server name, IP address and port number of the eMule server you want to add.
Server Name	Enter the server name.
IP Address	Enter the IP address of the server.
Port Number	Enter the port number used by the server for file-sharing.
ED2K Link	Select this and enter the ED2K link for the eMule server you want to add. The ED2K link is used within the eMule network and contains information about the server.
Insert server.met from URL	Select this and enter the URL from which you want to download the server list that you want the NSA to use.
Apply	Click this to apply your changes.
Cancel	Click this to return to the previous screen without saving.

10.5.3 Edit Server

Use this screen to edit a server for the eMule application.

Click **Edit** in the **Applications > eMule > Server** screen to edit a server.

Figure 122 Applications > eMule > Server: Edit

The following table describes the labels in this screen.

Table 51 Applications > eMule > Server: Edit

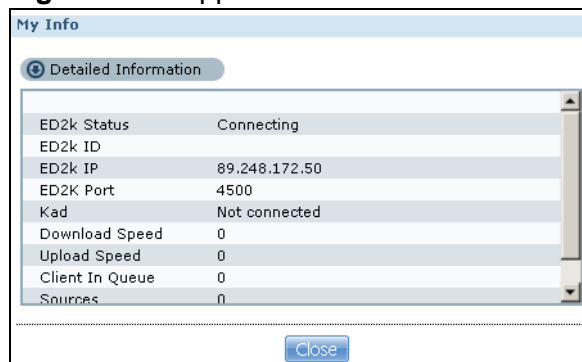
LABEL	DESCRIPTION
Server Name	Enter the server name.
IP Address	Enter the IP address of the server.
Port Number	Enter the port number of the server.
Apply	Click this to apply your changes.
Cancel	Click this to return to the previous screen without saving.

10.5.4 My Info

Use this screen to view the server details, including the status, IP address and download/upload speeds.

Click **MyInfo** in the **Applications > eMule > Server** screen to view the server details.

Figure 123 Applications > eMule > Server: MyInfo



The following table describes the labels in this screen.

Table 52 Applications > eMule > Server: MyInfo

LABEL	DESCRIPTION
ED2k Status	This shows the status of the NSA's connection to the server: Connected , Connecting or Not Connected .
ED2k ID	This is the identification given to the NSA by the eMule server. The ID comes in two types: <ul style="list-style-type: none"> • High ID - The NSA connects to the server directly. • Low ID - The NSA connects to the server from behind a firewall.
ED2k IP	This is the IP address of the eMule server to which the NSA is connected.
ED2k Port	This is the port number of the eMule server to which the NSA is connected.

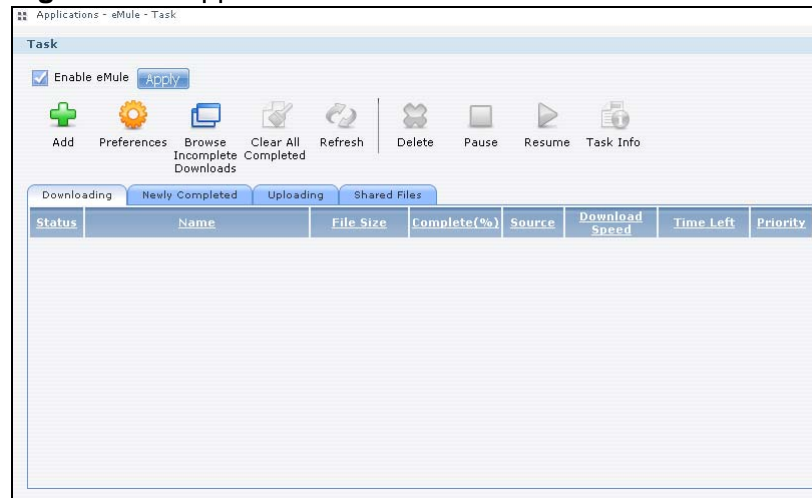
Table 52 Applications > eMule > Server: MyInfo

LABEL	DESCRIPTION
Kad	This shows the status of the NSA's connection to the Kad network: Connected or Not Connected . Kad is a shortcut for Kademlia network, which does not use servers to store files or user information in order to run a peer-to-peer network. Instead it employs peers/clients as small "servers" and runs queries through these peers.
Download Speed	This shows the current download speed of the eMule client.
Upload Speed	This shows the current upload speed of the eMule client.
Client in Queue	This shows the number of peers waiting to connect to the NSA to download its file (s).
Sources	This shows the total number of peers that can share the required files to the NSA eMule client.
Close	Click this to exit the screen.

10.5.5 eMule Task Screen

Use this screen to view tasks, including completed, downloading, uploading and shared tasks, that are being handled by the NSA.

Click **Applications > eMule > Task** screen to view the task details.

Figure 124 Applications > eMule > Task

The following table describes the labels in this screen.

Table 53 Applications > eMule > Task

LABEL	DESCRIPTION
Task	
Enable eMule	Check this and click Apply to enable the eMule application.

Table 53 Applications > eMule > Task

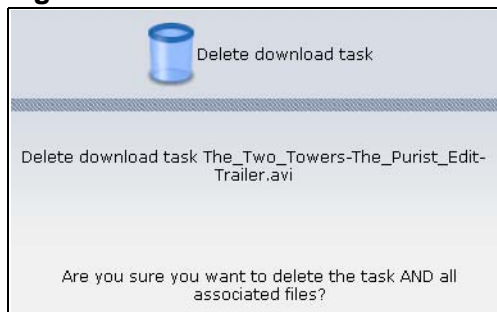
LABEL	DESCRIPTION
Add	Click this to add a download task (ED2K link) to the list. Refer to Section 10.5.6 on page 242 for the Add Task screen.
Preferences	Click this to open a screen where you can set the default location for saving downloaded files. You can also configure your eMule download settings. Refer to Section 10.5.7 on page 244 for the Preferences screen.
Browse Incomplete Downloads	Click this to open a screen where you can see a list of *.part.met files that the NSA is still in the process of downloading. Refer to Section 10.5.9 on page 248 for the Share Browsing screen.
Clear All Completed	Click this to remove all completed downloads from the task list. This only removes the newly completed task(s) in this session.
Refresh	Click this to refresh the task screen.
Delete	Select an item from the list and click this to delete the task.
Pause	Select an item from the list and click this to pause the task.
Resume	Select a paused item from the list and click this to resume the task.
Task Info	Select an item from the list and click this to view the details and status of the task.
The table lists your tasks. Click a column's heading to sort the entries by that criteria.	
Downloading	This table shows a list of download tasks that are still in progress.
Newly Completed	This table shows a list of tasks that have been completed but have not been cleared from the list.
Uploading	This table shows a list of upload tasks that are still in progress.
Shared Files	This table shows a list of files on the NSA that are available for download by other peers in the network.
Status	This shows the current status of the task: Waiting or Downloading .
Name/File Name	This shows the name of the file(s) associated to the task.
File Size/Size	This shows the size of the file(s) associated in the task.
Complete (%)	This shows the percentage of the file that has been downloaded by the NSA. It also indicates what percent of the file still needs to be downloaded.
Source	This shows the total number of peers that can share the required files to the NSA eMule client.
Download Speed	This shows the download speed of the NSA for the task.
Time Left	This shows how much more time the NSA needs to complete the file's download.
Priority	Use this field to set the priority for the task. Choose from Auto , Low , Normal or High . Select Auto to have the NSA automatically determine the task's priority. Select High to have the NSA complete this task before the others.

Table 53 Applications > eMule > Task

LABEL	DESCRIPTION
Transferred	This shows what percent of the file the NSA has uploaded to other peers. This column is available in the Uploading tab.
Upload Speed	This shows the upload speed of the NSA. This column is available in the Uploading tab.
Requests	This shows the number of requests for a shared file. This column is available in the Shared Files tab.
Accepted Requests	This shows the number of file requests granted by the NSA. This column is available in the Shared Files tab.

Note: Download tasks initially appear in the **Downloading** tab of the eMule **Task** screen. Depending on its status, it can eventually show up in the other tabs (**Newly Completed**, **Uploading** or **Shared Files** tabs).

You see a warning screen before you delete a task.

Figure 125 Delete a Task

10.5.6 Add Task

Use this to add a download task to the NSA.

Click **Add** in the **Applications > eMule > Task** screen to add a task.

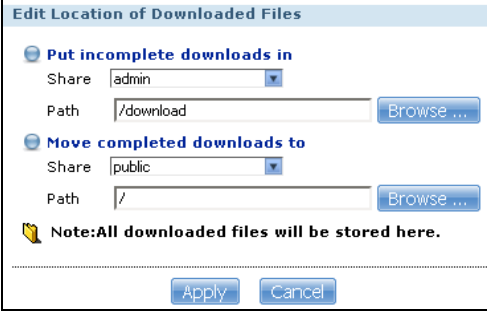


Figure 126 Applications > eMule > Task: Add

The following table describes the labels in this screen.

Table 54 Applications > eMule > Task: Add

LABEL	DESCRIPTION
Source	
ED2K Link	Paste the ED2K link of the file you want to download into this field. The ED2K link identifies files in the eMule network. It starts with ed2k:// and may contain the name and size of the file you want to download.
Location of Downloaded Files	This shows where the NSA stores new downloads (Put incomplete downloads in) and where the NSA moves completed downloads (Move completed downloads to). The Share column shows the name of the share where the file is downloaded. The Path column points to the location in the share where the NSA will save the downloaded files.

Table 54 Applications > eMule > Task: Add

LABEL	DESCRIPTION
Edit	<p>Click this to open the following screen where you can set the default folder location where you “Put incomplete downloads in” and “Move complete downloads to”:</p>  <ul style="list-style-type: none"> • Share - Select the destination share from the drop-down list. • Path - This field displays the share folder's path. You can use Browse to find or create a folder on the NSA or type the location of the folder using forward slashes as branch separators.  <ul style="list-style-type: none"> • Current Location - This is the location of the selected folder. • Folder Name - Enter a new folder name and click  to create it. • Type - This identifies the item as a folder or file. • Name - This is the name of the folder/file. <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the Path field. All contents within the specified share are automatically selected.</p> <p>Click Apply to save your settings and Cancel to close the screen.</p>
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

10.5.7 Preferences

Use this screen to configure your eMule settings, such as port numbers to use, its download/upload rates and the maximum number of peers allowed to connect to the NSA.

Click **Applications > eMule > Task > Preferences** to open the following screen.

Figure 127 Applications > eMule > Task > Preferences

The screenshot shows the 'Preferences' dialog box for eMule. It is organized into several sections, each with a blue header and a minus sign icon:

- Username:** A text input field containing 'http://www.eMule.org'.
- Location of Downloaded Files:** A table with two rows and two columns. The first row is 'Put incomplete downloads in' and the second is 'Move completed downloads to'. The columns are 'Share' and 'Path'.

	Share	Path
Put incomplete downloads in	admin	/eMule/Temp
Move completed downloads to	admin	/eMule/Incoming
- Port Number:** Two text input fields. 'UDP Port' is set to 4672 (with a note 'The default port number is 4672') and 'TCP Port' is set to 4662 (with a note 'The default port number is 4662').
- Upload and Download Rate:** Two text input fields. 'Max. download rate' is set to 0 (with a note '0=No Limit') and 'Max. upload rate' is set to 0 (with a note '0=No Limit').
- Connection:** A text input field for 'Maximum Number of Active Connections' set to 500.
- IP Filter:** A button labeled 'Edit IP Filter'.

At the bottom of the dialog are three buttons: 'Apply', 'Reset', and 'Cancel'.

The following table describes the labels in this screen.

Table 55 Applications > eMule > Task > Preferences

LABEL	DESCRIPTION
Username	
Username	Enter your user name that identifies the NSA in the eMule network.
Location of Downloaded Files	This shows where the NSA stores new downloads (Put incomplete downloads in) and where the NSA moves completed downloads (Move completed downloads to). The Share column shows the name of the share where the file is downloaded. The Path column points to the location in the share where the NSA will save the downloaded files.

Table 55 Applications > eMule > Task > Preferences

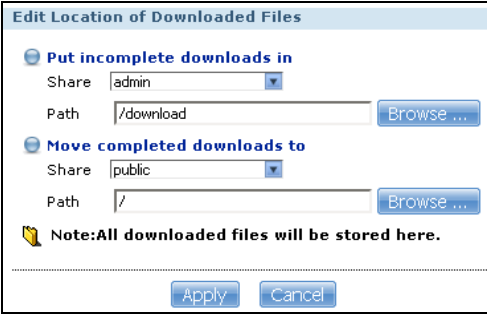


LABEL	DESCRIPTION
<p>Edit</p>	<p>Click this to open the following screen where you can set the default folder location where you “Put incomplete downloads in” and “Move complete downloads to”:</p>  <ul style="list-style-type: none"> • Share - Select the destination share from the drop-down list. • Path - This field displays the share folder’s path. You can use Browse to find or create a folder on the NSA or type the location of the folder using forward slashes as branch separators.  <ul style="list-style-type: none"> • Current Location - This is the location of the selected folder. • Folder Name - Enter a new folder name and click  to create it. • Type - This identifies the item as a folder or file. • Name - This is the name of the folder/file. <p>Select a folder. If you don’t select a folder, a forward slash (/) displays in the Path field. All contents within the specified share are automatically selected.</p> <p>Click Apply to save your settings and Cancel to close the screen.</p>
Port Number	
UDP Port	Enter the UDP port number you want to use for file transfers.
TCP Port	Enter the TCP port number you want to use for file transfers.
Upload and Download Rate	
Max. download rate	Enter the maximum download rate for download tasks.
Max. upload rate	Enter the maximum upload rate for upload tasks.
Connection	
Maximum Number of Active Connections	Enter the maximum number of eMule peer-to-peer connections.
IP Filter	

Table 55 Applications > eMule > Task > Preferences

LABEL	DESCRIPTION
Edit IP Filter	Click this to edit the IP Filter. IP filtering prevents your NSA from accessing certain networks and IP addresses that may be hosting malicious programs. Refer to Section 10.5.8 on page 247 to view and configure the Edit IP Filter screen.
Apply	Click this to save your changes.
Reset	Click this to clear the fields.
Cancel	Click this to return to the previous screen without saving.

10.5.8 Edit IP Filter

Use this screen to enable IP filtering which prevents your NSA from accessing certain networks and IP addresses that may be hosting malicious programs.

Figure 128 Applications > eMule > Task > Preferences: Edit IP Filter

The following table describes the labels in this screen.

Table 56 Applications > eMule > Task > Preferences: Edit IP Filter

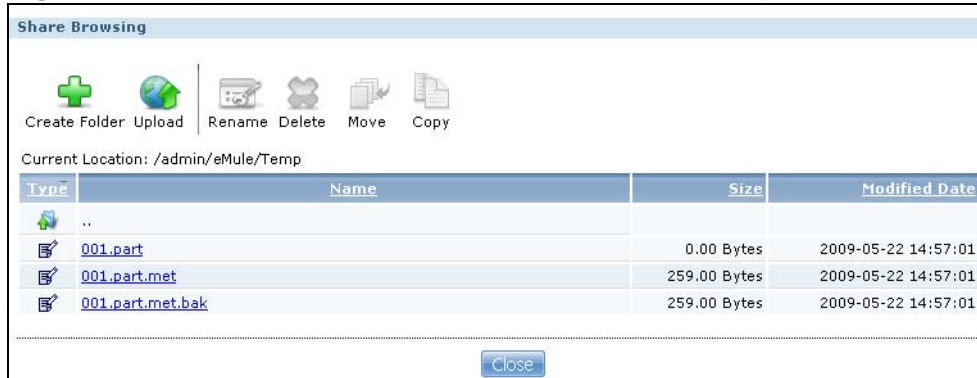
LABEL	DESCRIPTION
Enable IP Filter	Click this to enable IP filtering. This prevents your NSA from accessing certain networks and IP addresses that may be hosting malicious programs. Select Update IP Filter Table File from the Internet Every Week if you know the web location of the IP filter table you want to use. Enter the link where your NSA can acquire the list of networks and IP addresses. The NSA checks this link every week and uses the latest IP filter table available. Select Upload IP Filter Table if you want to use an IP filter table from your local computer.
Apply	Click this to save your changes.
Reset	Click this to return to the previous screen without saving.

10.5.9 Share Browsing

Use this screen to view a list of files that are still being downloaded by the NSA. The files are located in the eMule\Temp folder in the Admin share by default.

Click **Applications > eMule > Task > Browse Incomplete Downloads** to open the following screen.

Figure 129 Applications > eMule > Task > Browse Incomplete Downloads



The following table describes the labels in this screen.

Table 57 Sharing > Shares > Share Browser

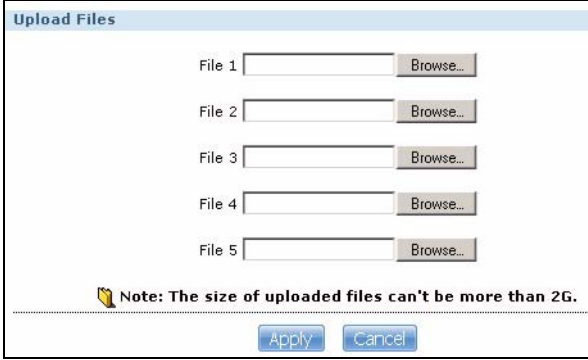
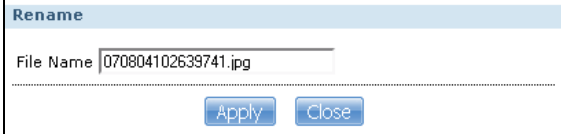

LABEL	DESCRIPTION
Create Folder	Type a folder name and click Apply to make a new folder. The name can be 1 to 239 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing folder in the same path. See Section 3.4.6 on page 62 for more information on folder names.
Upload	Click this to add files to the share. Use Browse to locate a file and click Apply to upload the file. Note that the size of each file should be less than 2 GB. 

Table 57 Sharing > Shares > Share Browser (continued)

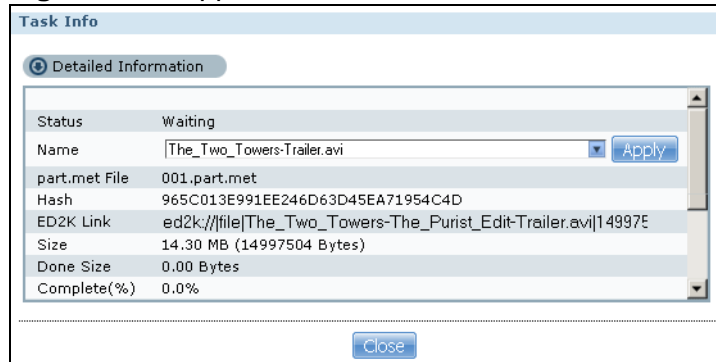
LABEL	DESCRIPTION
Rename	<p>Select a folder or file and click this to open a screen. Enter the name you want and click OK to make the changes.</p> <p>Note: When you change a file name, make sure you keep the file extension.</p> 
Delete	<p>Select a file/folder from the list and click this to open a warning screen. Click Yes to delete the file/folder, or click No to close the screen.</p> 
Move	Select a file/folder from the list and click this to relocate the file/folder to another share.
Copy	Select a file/folder from the list and click this to make a duplicate of the file/folder to another share.
Current location	This is the name of the share and folder path that you are in.
Type	<p>The icon in this column identifies the entry as a folder or a file.</p> <p>The folder with an arrow pointing up is for the link that takes you to the next higher layer in the share's folder tree.</p>
Name	This section lists the share's existing folders or files. Click to the right of the file/folder name to select the file/folder. You can also click the folder's name to navigate to a sub-folder within the folder.
Size	This field displays size of the file.
Modified Date	This field displays a file's latest modification date.
Close	Click this to close the screen.

10.5.10 Task Info

Use this screen to view eMule task details, such as status, file name, file size and its download progress.

Click **Task Info** in **Applications > eMule > Task** screen to open the following.

Figure 130 Applications > eMule > Task: Task Info



The following table describes the labels in this screen.

Table 58 Applications > eMule > Task: Task Info

LABEL	DESCRIPTION
Status	This shows the current status of the task - Waiting or Downloading .
Name	This shows the file name of the file associated with the task. You can change this file name by entering the new name and clicking Apply .
part.met File	This shows the temporary file name for an incomplete file. Files in peer-to-peer networks can be divided into several parts for easier download. Once all the parts have been downloaded, you can run one part and the file automatically rebuilds itself. If the download of the file(s) is not completed, the file parts cannot open on their own.
Hash	This shows the hash value of the download file. This is a text string that can be interpreted by eMule to check the downloaded file's integrity.
ED2K Link	This shows the ED2K link for this file. The ED2K link identifies files in the eMule network. It starts with ed2k:// and may contain the name and size of the file you want to download.
Size	This shows the size of the file associated with the task.
Done Size	This shows the size of the file that has been downloaded so far.
Complete (%)	This shows what percent of the file has been downloaded so far.
Source	This shows the total number of peers that can share the required files to the NSA eMule client.
Download Speed	This shows the download speed for the task.
Time Left	This shows how much time is needed to complete the task.
Priority	This shows the priority of this task. You can set this in Section 10.5.5 on page 240 .

Table 58 Applications > eMule > Task: Task Info

LABEL	DESCRIPTION
Seen Complete	This shows the last time a source with the complete file was online.
Close	Click this to exit the screen.

10.5.11 eMule Search Screen

Use this screen to search for files available in an eMule server using keywords and other parameters, such as file type, file size and extension names.

Click **Applications > eMule > Search** to open the following screen.

Figure 131 Applications > eMule > Search

The following table describes the labels in this screen.

Table 59 Applications > eMule > Search

LABEL	DESCRIPTION
Search	
Enable eMule	Check this and click Apply to enable the eMule application.
Keyword(s)	Enter words that are related to the file you want to download.
File Type	Select the file type that you want to download.
Method	Select the search method you want eMule to employ.
Min Size	Enter the minimum file size you want included in the search results.
Max Size	Enter the maximum file size you want included in the search results.
Min Sources	Enter the minimum number of peers sharing the file you want to download.
Extension	Enter the file extensions separated by commas of files you want included in the search results.
Search	Click this to have the NSA search the eMule network for files that match the criteria you have set.
Clear	Click this to clear the fields.

Table 59 Applications > eMule > Search

LABEL	DESCRIPTION
Download	Select a file from the results and click this to start downloading the file.
This table shows the results of the search.	
File Name	This shows the name of the file(s) that match the criteria you have set.
File Size	This shows the size of the file(s) that match the criteria you have set.
Source	This shows how many peers are currently available to share this file so that the NSA can download it.

10.6 DyDNS Screen

Use this to enable and configure DyDNS.

Dynamic DNS allows you to update your current dynamic IP address with a dynamic DNS service so that anyone can contact you (such as through NetMeeting or CUSeeMe). You can also access your FTP server or Web site on your own computer using a domain name (for instance myhost.dhs.org, where myhost is a name of your choice) that will never change instead of using an IP address that changes each time you reconnect. Your friends or relatives will always be able to call you even if they don't know your IP address.

Click **Network > DyDNS** to open the following screen.

Figure 132 Network > DyDNS

Network - DyDNS

Gateway Information

Internal Address: unknown

External Address:

Configuration

Enable DyDNS support to allow users to access the server through a registered hostname.

Enable DyDNS

Service Provider: DynDNS.com

Hostname:

Username:

Password:

Password (Confirm):

Apply Reset

The following table describes the labels in this screen.

Table 60 Network > DyDNS

LABEL	DESCRIPTION
Gateway Information	
Internal Address	This shows the IP address assigned to the NSA by the gateway in your local network.
External Address	This shows the IP address of the NSA that can be accessed in the Wide Area Network (WAN). Note that this is not assigned by the DyDNS server.
Configuration	
Enable DyDNS	Select this to use dynamic DNS. You need to have registered a dynamic DNS account with a service provider such as www.dyndns.org . The Dynamic DNS service provider will give you a password or key.
Service Provider	Select your Dynamic DNS service provider.
Hostname	Enter your host name provided by the Dynamic DNS service.
Username	Enter your user name for your DNS account.
Password	Enter the password assigned to your DNS account.
Password (Confirm)	Confirm the password you entered.
Apply	Click this to save your changes.
Reset	Click this to clear the fields.

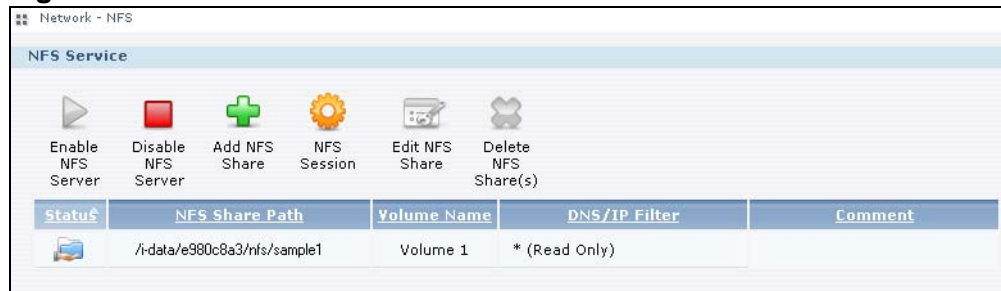
10.7 NFS Screen

Use this screen to enable and configure Network File System (NFS) settings on your NSA.

NFS is a client/server distributed file service that provides transparent file sharing for network environments. This allows shared folders in your NSA to be accessible like a local folder in a user's computer.

Click **Network > NFS** to open the following screen.

Figure 133 Network > NFS



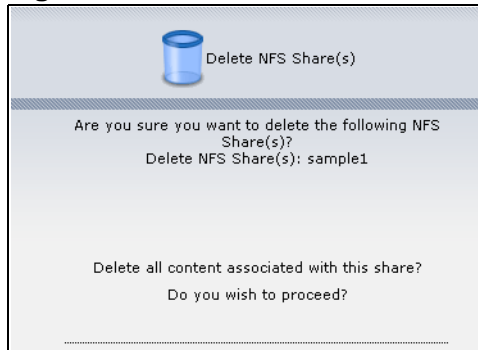
The following table describes the labels in this screen.

Table 61 Network > NFS

LABEL	DESCRIPTION
NFS Service	
Enable NFS Server	Click this to employ NFS in your NSA.
Disable NFS Server	Click this to stop using NFS. This makes all NFS shares unavailable.
Add NFS Share	Click this to add an NFS share. Refer to Section 10.7.1 on page 255 for the Add NFS Share screen.
NFS Session	Click this to view active NFS sessions. You can see the list of users who have access to the NFS shares. Refer to Section 10.7.2 on page 256 for the NFS Session screen.
Edit NFS Share	Select an NFS share from the list and click this to edit it. Refer to Section 10.7.1 on page 255 for the Edit NFS Share screen.
Delete NFS Share (s)	Select an NFS share from the list and click this to delete it.
The table lists your NFS shares. Click a column's heading to sort the entries by that criteria.	
Status	This shows whether the share is active or not.
NFS Share Path	This shows the location of the share in the NSA.
Volume Name	This shows the volume where the NFS share is located.
DN/IP Filter	This shows which domain name(s) or IP address(es) have read/write access to the NFS shares. Refer to Section 10.7.1 on page 255 for the screen where you can configure this.
Comment	This shows a short description of the share.

You see a warning screen before you delete a volume.

Figure 134 Delete an NFS Share



10.7.1 Add/Edit NFS Share

Use this screen to add or edit an NFS share.

Note: Some attributes of the NFS share cannot be edited.

Click **Add** or **Edit** in the **Network > NFS** screen to open the following:

Figure 135 Network > NFS: Add/Edit

The following table describes the labels in this screen.

Table 62 Network > NFS: Add/Edit

LABEL	DESCRIPTION
Volume Name	Select the volume where the folder you want to add as an NFS share is located.
NFS Share Name	Enter the name you want to give to the NFS share.
Full Path	This shows the location of the NFS share in the NSA. The NFS server assigns this path to the share folder you input.
Comment	Enter a short description for the share.

Table 62 Network > NFS: Add/Edit

LABEL	DESCRIPTION
DN/IP Filter	<p>Enter the domain name(s) or IP address(es) that can have access to the NFS share.</p> <p>Enter '*' to make the share available to all users in the network. You can also enter a wildcard, such as '*.domain.com' to indicate that all users within that network have access to the share.</p> <p>Select the access rights you want to grant to each domain name or IP address you enter and click Add.</p> <ul style="list-style-type: none"> • Read Only - Users with this access right can only view and copy files in the NFS share but cannot modify or delete them. • Read/Write - Users with this access right can view, edit or delete files in the NFS share.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

10.7.2 NFS Session

Use this screen to view a list of active NFS sessions. You can see which users are connected the NFS shares.

Click **NFS Session** in the **Network > NFS** screen to open the following.

Figure 136 Network > NFS: NFS Session

NFS Session				
Type	NFS Share Path	Username	Connected At	IP Address
Currently, there are no NFS sessions.				
OK				

The following table describes the labels in this screen.

Table 63 Network > NFS: NFS Session

LABEL	DESCRIPTION
Type	This shows if the NFS share is active or not.
NFS Share Path	This shows the location of the share in the NSA.
Username	This shows the username of the active user connected to the NFS share.
Connected At	This displays the date and time the user last connected to the NSA in year, month, day, hour, minute, second format.
IP Address	This shows the IP address of the user accessing the NFS share.
OK	Click this to close the window.

10.8 SMART Screen

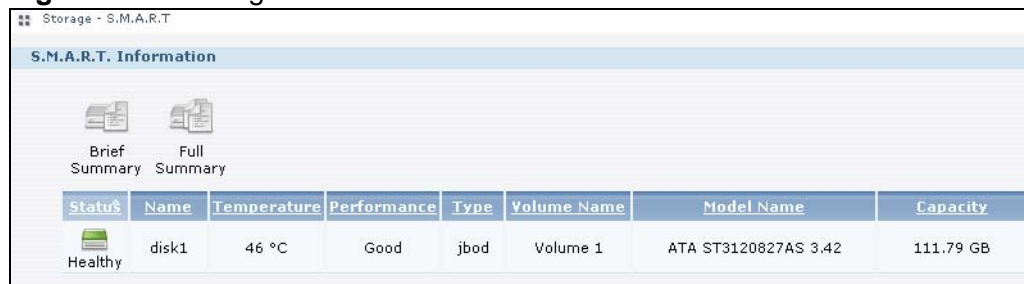
Use this screen to view indicators of your NSA's hard disk(s) health.

Self Monitoring, Analysis, and Reporting Technology (S.M.A.R.T) detects and reports the reliability of hard disks using standard indicators (called "attributes"), to help you anticipate possible disk failures.

Note: The fields included the screens may vary depending on the hard disk that you use.

Click **Storage > S.M.A.R.T** to open the following screen.

Figure 137 Storage > S.M.A.R.T



The following table describes the labels in this screen.

Table 64 Storage > S.M.A.R.T

LABEL	DESCRIPTION
S.M.A.R.T. Information	
Brief Summary	Select a hard disk volume from the list and click this to display information about the volume, such as the hard disk vendor, specific model, hard disk capacity and so on. See Section 10.8.1 on page 258 to view the Brief Summary screen.
Full Summary	Select a volume and click this to display more detailed information about the volume. See Section 10.8.1 on page 258 to view the Full Summary screen.
The table lists your hard disks. Click a column's heading to sort the entries by that criteria.	
Status	This shows the condition of the hard disk volume. Go to Section 7.3.1 on page 164 for more information.
Name	This shows the name assigned to the hard disk.
Temperature	This shows the temperature of the hard disk in degrees celsius.

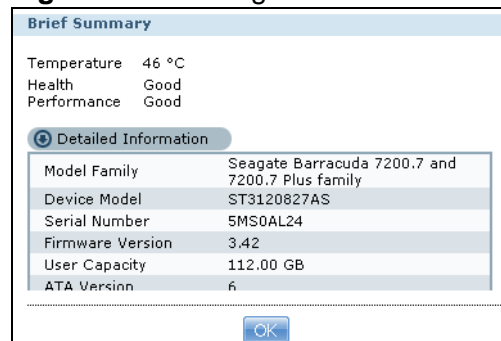
Table 64 Storage > S.M.A.R.T

LABEL	DESCRIPTION
Performance	This shows your hard disk's performance. Refer to Section 10.8.2 on page 259 for more information on how S.M.A.R.T determines your hard disk's condition. This displays: <ul style="list-style-type: none"> • Good - This shows when you compare each Value with the Threshold Value and all the Value is greater than the Threshold Value. • Bad - This shows when you compare each Value with the Threshold Value and at least one Value is less than or equal to the Threshold Value.
Type	This shows volume type or file system that the hard disk is using, such as JBOD , PC Compatible Volume and RAID or FAT32 , FAT16 and NTFS . See Section 7.6.3 on page 169 for descriptions of the volume types.
Volume Name	This shows the name of the hard disk volume.
Model Name	This shows the factory model of the hard disk.
Capacity	This shows the total hard disk space of the hard disk volume.

10.8.1 SMART Brief Summary

Use this screen to display information about the volume, such as the hard disk vendor, specific model, hard disk capacity and so on.

Click **Brief Summary** in the **Storage > S.M.A.R.T** screen to display the following.

Figure 138 Storage > S.M.A.R.T: Brief Summary

The following table describes the labels in this screen.

Table 65 Storage > S.M.A.R.T: Brief Summary

LABEL	DESCRIPTION
Brief Summary	
Temperature	This shows the current temperature of the hard disk in degrees celsius.

Table 65 Storage > S.M.A.R.T: Brief Summary

LABEL	DESCRIPTION
Health	This describes the overall health of the volume based on S.M.A.R.T diagnostics.
Performance	This shows your hard disk's performance. Refer to Section 10.8.2 on page 259 for more information on how S.M.A.R.T determines your hard disk's condition. This displays: <ul style="list-style-type: none"> • Good - This shows when you compare each Value with the Threshold Value and all the Value is greater than the Threshold Value. • Bad - This shows when you compare each Value with the Threshold Value and at least one Value is less than or equal to the Threshold Value.
Detailed Information	
Model Family	This shows the vendor and product family of the hard disk.
Device Model	This shows the factory model of the hard disk.
Serial Number	This shows the serial number of the hard disk.
Firmware Version	This shows the firmware version installed in the hard disk.
User Capacity	This shows the total hard disk space of the hard disk volume.
ATA Version	This shows the ATA version of the hard disk, which refers to an industry standard category for storage devices and connectors used.
ATA Standard	This field displays the Advanced Technology Attachment standard the hard drive supports.
Local Time	This field displays the local time that the hard drive is using.
SMART support	This field displays whether or not the hard drive is SMART-capable.
SMART support	This field displays whether or not the hard drive has SMART monitoring turned on.
OK	Click this to close the window.

10.8.2 SMART Full Summary

Use this screen to display more details information about the volume.

Click **Full Summary** in the **Storage > S.M.A.R.T** screen to display the following.

Figure 139 Storage > S.M.A.R.T: Full Summary

Full Summary								
ID	Attribute Name ^	Flag	Value	Worst	Threshold	Type	Updated	When Failed
197	Current_Pending_Sector	0x0012	100	100	000	Old_age	Always	-
195	Hardware_ECC_Recovered	0x001a	063	045	000	Old_age	Always	-
200	Multi_Zone_Error_Rate	0x0000	100	253	000	Old_age	Offline	-
198	Offline_Uncorrectable	0x0010	100	100	000	Old_age	Offline	-
12	Power_Cycle_Count	0x0032	100	100	020	Old_age	Always	-
9	Power_On_Hours	0x0032	097	097	000	Old_age	Always	-
1	Raw_Read_Error_Rate	0x000f	063	045	006	Pre-fail	Always	-
5	Reallocated_Sector_Ct	0x0033	100	100	036	Pre-fail	Always	-
7	Seek_Error_Rate	0x000f	082	060	030	Pre-fail	Always	-

OK

The following table describes the labels in this screen.

Table 66 Storage > S.M.A.R.T: Full Summary

LABEL	DESCRIPTION
ID	<p>This is the identification number used to tag a hard disk attribute.</p> <p>This is standard across all S.M.A.R.T-enabled storage devices. However it depends on the storage vendor which attributes it will allow S.M.A.R.T to diagnose.</p>
Attribute Name	<p>This refers to an attribute of the hard disk that S.M.A.R.T can assess. Attributes describe the hard disk's physical state, performance, wear-and-tear, and so on.</p>
Flag	<p>This shows a code that S.M.A.R.T uses to determine the current state of the hard disk.</p>
Value	<p>This is a value that corresponds to the Raw Value. Compare this with the Threshold Value.</p> <p>S.M.A.R.T compresses the raw value(s) into a digit from 1 to 253, where 1 indicates the worst scenario while 253 indicates the best scenario.</p> <p>The values 100 or 200 usually represent the mean or normal value.</p>
Worst	<p>This is the lowest value attained by the hard disk since S.M.A.R.T started its assessment of the hard disk.</p>
Threshold	<p>This is the attribute's threshold value. If the attribute's current normalized value is less than or equal to the threshold, the attribute has failed. An attribute value close to or below the threshold indicates the hard drive is no longer reliable.</p>
Type	<p>This shows S.M.A.R.T's assessment of the hard disk.</p> <p>Old_age indicates end-of-product life from old-age (normal wearing out) if the attribute value is less than or equal to the threshold.</p> <p>Pre-fail indicate imminent hard drive failure if the attribute value is less than or equal to the threshold.</p> <p>Note that just because an attribute is of the Pre-fail type does not mean your hard drive is ready to fail. It only means this if the current normalized value of the attribute is less than or equal to the threshold.</p>
Updated	<p>This indicates when the hard drive updates the value for this attribute.</p> <ul style="list-style-type: none"> • Always means the hard drive updates this attribute during normal operation and during offline activities. • Offline means the hard drive only updates this attribute when no one is accessing the hard drive.

Table 66 Storage > S.M.A.R.T: Full Summary

LABEL	DESCRIPTION
When Failed	<p>This column indicates when (if ever) the attribute failed. An attribute has failed if the normalized value is less than or equal to the threshold.</p> <ul style="list-style-type: none"> • -: This displays if the attribute is not failing now and has never failed in the past. • FAILING_NOW: This displays if the attribute's current normalized value is less than or equal to the threshold. • In_the_past: This displays if the attribute's current normalized value is greater than the threshold but the worst recorded value is less than or equal to the threshold.
Raw Value	<p>This is the attribute's unprocessed raw data. These values show exact amounts of time or numbers of attempts or errors. The meaning to the raw values is specific to the hard drive manufacturer. Table 42 on page 156 has some information about whether a higher or lower individual raw S.M.A.R.T. attribute value is better.</p>
OK	Click this to close this window.

10.9 Protect Screens

The **Protect** screens include:

- **Backup** screens - These include steps to create and customize backup jobs.
- **Restore** screens - These include steps to restore previous backups made with the NSA.

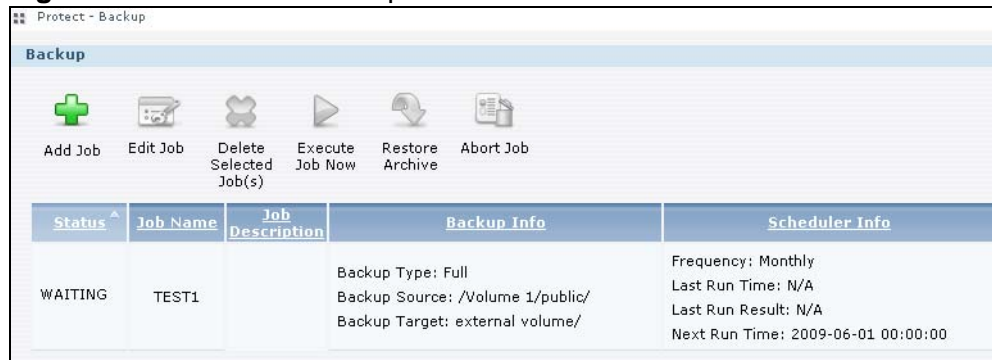
10.10 Backup Screens

Use this screen to create and customize scheduled backup jobs for your files.

You can have several backup jobs for specific folders and time periods.

Click **Protect > Backup** to open the following screen.

Figure 140 Protect > Backup



The following table describes the labels in this screen.

Table 67 Protect > Backup

LABEL	DESCRIPTION
Backup	
Add Job	Click this to create and customize a backup job.
Edit Job	Select a backup job in the list and click this to make some changes to it.
Delete Selected Job(s)	Select a backup job in the list and click this to delete it.
Execute Job Now	Select a backup job in the list and click this to run the backup job immediately.
Restore Archive	Select a backup job in the list and click this to restore the file(s) included in that backup job to the NSA. This applies to Archive backups only. Refer to Section 10.10.8 on page 273 to see the screens.
Abort Job	Select a backup job in the list and click this to stop the process if the backup job is currently active.
Status	This shows the current state of the backup job. <ul style="list-style-type: none"> Waiting means the backup job is not active but is scheduled to run at some time. Running indicates that the NSA is currently doing the backup job. When the backup job is running, you can also see a progress bar.
Job Name	This identifies the backup job.
Job Description	This is a short description of the backup job.
Backup Info	This lists down the backup job details: type, source and target. Refer to Section 10.10.1 on page 263 and Section 10.10.2 on page 265 .
Scheduler Info	This shows the backup schedule, including the frequency, the time it was last run in (and whether or not it succeeded), and when it is scheduled to run again. The times use yyyy-mm-dd hh:mm:ss format. Refer to Section 10.10.4 on page 269 .

10.10.1 Backup: Step 1

Use this screen to specify the job information and back up type.

Click **Add Job** in the **Protect > Backup** screen to open the following:

Figure 141 Protect > Backup: Step 1

The following table describes the labels in this screen.

Table 68 Protect > Backup: Step 1

LABEL	DESCRIPTION
Job Information	
Job Name	Enter a name to identify the backup job.
Job Description	Enter a short description (up to 100 keyboard characters) for the backup job.

Table 68 Protect > Backup: Step 1

LABEL	DESCRIPTION
Backup Type	<p>Choose the backup type that you want the NSA to implement for the backup job.</p> <p>Archive - This is a backup of the source folder in an archive format. Once you backup your files in the target folder, you cannot access the files individually unless you have the extracting tool used by the NSA. If there are existing files in the target folder prior to the NSA's backup job, the files remain undisturbed. You can also choose between the following types of archive:</p> <ul style="list-style-type: none"> • Full - The NSA does a fresh backup each time. This provides the most protection but also requires the most storage space. • Incremental - The NSA backs up new or modified files from the source folder since the last backup. The first backup is a full backup. You can also do a full backup after several incremental backups. Enter how many incremental backups the NSA runs before it performs a full backup of the source folder. You must keep the latest full backup to be able to restore the files later. <p>Synchronization - This does a backup of individual files. If you use this type, you cannot use the Restore feature of the NSA. You can also choose between the following types of synchronization:</p> <ul style="list-style-type: none"> • Mirror - The NSA deletes all data in the target folder before running the backup. It makes the target folder identical to the source folder. • Publish- The NSA does a backup of individual files to the target folder without overwriting existing files in that folder. It makes a copy of the source files.
Next	Click this to go to the next step.

10.10.2 Backup: Step 2

Use this screen to specify where the files you want to backup are located and set where you want the backup to be stored.

Figure 142 Protect > Backup: Step 2

Protect - Backup

Add a new backup Job

Step 2

Backup Source

Volume 1

Selected Source Folders

Backup Target

Remote

Remote NSA Address

Username

Password

Share Name

Test Connection

Local

External

Previous Next

The following table describes the labels in this screen.

Table 69 Protect > Backup: Step 2













LABEL	DESCRIPTION
Backup Source	<p>Select an (internal) volume and the folders and files to back up using this tree interface.</p> <p>Click  to browse through folders, sub-folders and files.</p> <p>Click  to close a folder in the tree. This is useful if there are many folders or files that you wish to hide from view.</p> <p>Click  to select a folder or file to back up. This also selects all sub-folders and files.</p> <p>Click  to deselect the folder or file. This also deselects all sub-folders and files.</p> <p>More ...  and More ...  appear when there are too many folders/files to display. Click the arrows to scroll up or down through the folders/files.</p> <p> for a folder means all sub-folders and files and new folders/files added later will be backed up.</p> <p> for a file means the file will be backed up.</p> <p> (a grayed out check box) for a folder means that only some sub-folders and files under the folder will be backed up. Newly added folders/files will NOT be backed up.</p> <p> means the file structure is still loading. Please wait for the folders/files to display.</p> <p>Note: If you select to back up an entire folder  and then deselect a sub-folder or file within that folder, the main folder icon will turn  and any new sub-folders and files added to this main folder after the initial backup configuration will NOT be backed up.</p> <p>A list of your select folders and files displays below the selection fields.</p>
Selected Source Folders	This shows the path of the backup source folder you selected.
Backup Target	Select the target folder where you want to place your backup.

Table 69 Protect > Backup: Step 2

LABEL	DESCRIPTION
Remote	<p>Select this to back up to another device.</p> <p>For Archives:</p> <p>The remote device can be another NSA in the network. Fill in the following fields in order to be able to access it.</p> <ul style="list-style-type: none"> • Remote NSA Address • Username • Password • Share Name <p>Click Test Connection to see if your NSA can communicate with the remote device.</p> <p>For Synchronization:</p> <p>The remote device must be another NSA compatible with the NSA's synchronization feature. Fill in the following fields in order to be able to access it.</p> <ul style="list-style-type: none"> • Remote NSA Address • Username (always "admin") • Remote Admin's Password <p>Click Show target content to connect to the remote NSA so you can select the target share for the backup.</p>
Local	<p>Select this if you want to place your backup in another volume in the NSA. Select the folder where you want to place the backup.</p>
External	<p>Select this if you have a USB hard disk connected to the NSA that you want to use for your backup. Select the folder where you want to place the backup.</p>
Previous	<p>Click this to go back to the previous screen.</p>
Next	<p>Click this to go to the next screen.</p>

10.10.3 Backup: Step 3

Use this screen to specify compression, encryption and purge policies for the backup job. This step is only available if you are doing an archive backup or a synchronization backup to a remote target.

Figure 143 Protect > Backup: Step 3

The screenshot shows a web-based configuration interface for a backup job. The title bar reads 'Protect - Backup'. Below it, a header says 'Add a new backup Job'. The main content area is titled 'Step 3' and contains three sections:

- Compression:** A dropdown menu is set to 'Compression'. Below it are two radio buttons: 'Yes' (selected) and 'No'.
- Encryption:** A dropdown menu is set to 'Encryption'. Below it are two radio buttons: 'Yes' and 'No' (selected).
- Bandwidth:** A text input field contains 'N/A', followed by the text 'KB/s (0 for no limitation)'.
- Purge Policy:** A dropdown menu is set to 'Purge Policy'. Below it are three radio buttons: 'Keep All Old Backup files' (selected), 'Keep Only the last [] backup files(1-30)', and 'Keep Backups For [] day(s)(1-3650)'.

At the bottom right of the form, there are two buttons: 'Previous' and 'Next'.

The following table describes the labels in this screen.

Table 70 Protect > Backup: Step 3

LABEL	DESCRIPTION
Compression	Select Yes if you want NSA to compress the files for your backup. Otherwise, choose No . In an Archive backup, compression is a method of packing computing files in a way that saves hard disk space. For a Synchronization backup (to a remote target), the source data will be compressed before the transmission to reduce the transmission time. It is used in slow networks only.
Encryption	Select Yes if you want NSA to encrypt the files for your backup. Otherwise, choose No . In an Archive backup, this means using a password to secure files. For a Synchronization backup (to a remote target), this means securing the file transfer session. However the final file stored on the remote NSA is unencrypted. This takes a long time. Make sure you really need this feature before enabling it.
Bandwidth	Restrict the bandwidth of synchronization backups to help stop them from using all of your network connection's available bandwidth. This is more important when backing up to a remote NSA or computer through the Internet.

Table 70 Protect > Backup: Step 3

LABEL	DESCRIPTION
Purge Policy	<p>The NSA maintains the files that have been included in your backups. However to save hard disk space, you can choose to delete files that have been included in previous backups.</p> <ul style="list-style-type: none"> Select Keep All Old Backup files to store all files that have been included in previous backups. If you want to store a certain number of backup files, select Keep Only the last n backup files (1-30). Enter a value (n) from 1 to 30 to specify how many backups the NSA stores. All backup files older than the last one are deleted. You will not be able to recover files that existed (only) in those previous backups. Select this if backup space is limited and recovery of old files is not important. If you want to store all backups for a certain time period, select Keep Backups for n day(s) (1-3650). Enter a value (n) from 1 to 3650 to specify how many days the NSA stores all backup files. After this day has expired, all backup files will be deleted.
Previous	Click this to go back to the previous screen.
Next	Click this to go to the next screen.

10.10.4 Backup: Step 4

Click this to specify the schedule for the backup job. The backup job automatically runs according to the schedule that you set in this screen.

Figure 144 Protect > Backup: Step 4

The screenshot shows the 'Add a new backup Job' screen, Step 4, Scheduler configuration. The screen is titled 'Add a new backup Job' and 'Step 4'. Under the 'Scheduler' section, there are three main fields: 'Backup Frequency' set to 'Monthly', 'Start Time (hh:mm)' set to '0:00', and 'Step 1: Please select the month(s) of a year' with checkboxes for January through December. Below that is 'Step 2: Please select the day of the month' with radio buttons for 'Day' and 'First', and a dropdown menu for 'Monday'. At the bottom right, there are 'Previous' and 'Done' buttons.

The following table describes the labels in this screen.

Table 71 Protect > Backup: Step 4

LABEL	DESCRIPTION
Scheduler	
Backup Frequency	Select from Hourly, Daily, Weekly and Monthly backup intervals. The screen changes depending on the item you select.

Table 71 Protect > Backup: Step 4

LABEL	DESCRIPTION
Every how many hours?	This is only available if you selected Hourly as your backup frequency. Select every how many hours the NSA performs the backup job.
On which minute of the hour?	This is only available if you selected Hourly as your backup frequency. Select the minute (from 0 to 59) in an hour when the NSA performs the backup job.
Start Time (hh:mm)	This is available if you selected Daily, Weekly or Monthly as your backup frequency. Select the time in hour:minute format when you want the NSA to perform the backup job.
Every how many days?	This is only available if you selected Daily as your backup frequency. Enter the interval between days when the NSA performs the backup job.
Every how many weeks?	This is only available if you selected Weekly as your backup frequency. Enter the interval between weeks when NSA performs the backup job.
Step 1: Please select the month(s) of a year	This is only available if you selected Monthly as your backup frequency. Select the month(s) when you want the NSA to perform the backup job.
Step 2: Please select the day of the month	This is only available if you selected Monthly as your backup frequency. Select the day in a month when you want the NSA to perform the backup job.
Previous	Click this to go back to the previous screen.
Done	Click this to close the screen.

10.10.5 Edit Job Screen

Use this screen to edit an existing backup job. Some attributes of the backup job cannot be changed, such as the name, backup type, source folder and so on.

10.10.6 Edit Job: Step 1

Click **Protect > Backup**. Select a backup job from the list and click **Edit Job** to open the following.

Figure 145 Protect > Backup > Edit: Step 1

The screenshot shows a configuration window titled "Protect - Backup" with a sub-header "Step 1". Under "Job Settings", the following fields are visible:

- Job Name**: Example_Backup
- Job Description**: This is an example.
- Backup Type**: incremental
- Source folder(s)/file(s)**: Volume 1/music/
- Backup Target**: External Volume
- Target Path**: silicon--power-0-001/
- Compression**: No
- Encryption**: No
- Bandwidth**: N/A KB/s (0 for no limitation)
- Purge Policy**:
 - Keep All Old Backup files
 - Keep Only the last [] backup files(1-30)
 - Keep Backups For [] day(s)(1-3650)

A "Next" button is located at the bottom right of the configuration area.

The following table describes the labels in this screen.

Table 72 Protect > Backup > Edit: Step 1

LABEL	DESCRIPTION
Job Settings	
Job Name	This field is read-only and shows the name of the backup job.
Job Description	Enter a short description for the backup job.
Backup Type	This field is read-only and shows the backup type.
Source folder(s)/file(s)	This is read-only and shows the path of the source folder for backup.
Backup Target	This field is read-only and shows on which volume (whether internal or external) the backup files are stored. If the target location is a remote NSA, this shows the remote IP address.
Target Path	This field is read-only and shows the target folder for the backup files.

Table 72 Protect > Backup > Edit: Step 1

LABEL	DESCRIPTION
Compression	This field is read-only and shows whether the backup employs compression. Compression reduces the size of the file that you want to back up. Backup is then faster, but restoring may be slower, so if backup space is not a concern and recovery speed is, then turn off compression.
Encryption	This field is read-only and shows whether the backup employs encryption. You can have the NSA use a password to encrypt the backup files.
Bandwidth	For backups to a remote NSA, you can restrict the bandwidth to help prevent the backups from using all of your network connection's available bandwidth. This is more important when backing up to a remote NSA or computer through the Internet.
Purge Policy	The NSA maintains the files that have been included in your backups. However to save hard disk space, you can choose to delete files that have been included in previous backups. <ul style="list-style-type: none"> • Select Keep All Old Backup files to store all files that have been included in previous backups. • If you want to store a certain number of backup files, select Keep Only the last n backup files (1-30). Enter a value (n) from 1 to 30 to specify how many backups the NSA stores. All backup files older than the last one are deleted. You will not be able to recover files that existed (only) in those previous backups. Select this if backup space is limited and recovery of old files is not important. • If you want to store all backups for a certain time period, select Keep Backups for n day(s) (1-3650). Enter a value (n) from 1 to 3650 to specify how many days the NSA stores all backup files. After this day has expired, all backup files will be deleted.
Next	Click this to go to the next screen.

10.10.7 Edit Job: Step 2

Use this screen to edit the schedule for the backup job.

Figure 146 Protect > Backup > Edit: Step 2

The screenshot shows the 'Edit' screen for a backup job, specifically Step 2. The window title is 'Protect - Backup' and the page header is 'Edit'. The main content area is titled 'Step 2' and contains the following settings:

- Scheduler Settings** (selected):
 - Backup Frequency: Monthly
 - Start Time (hh:mm): 1:00
 - Step 1: Please select the month(s) of a year.
 - January, February, March, April, May, June, July, August, September, October, November, December
 - Step 2: Please select the day of the month.
 - * Day
 - First Sunday

At the bottom right, there are 'Previous' and 'Done' buttons.

The following table describes the labels in this screen.

Table 73 Protect > Backup > Edit: Step 2

LABEL	DESCRIPTION
Scheduler Settings	
Backup Frequency	Edit this by selecting from Hourly , Daily , Weekly and Monthly backup intervals. The screen changes depending on the item you select.
Every how many hours?	This is only available if you selected Hourly as your backup frequency. Select every how many hours the NSA performs the backup job.
On which minute of the hour?	This is only available if you selected Hourly as your backup frequency. Select the minute (from 0 to 59) in an hour when the NSA performs the backup job.
Start Time (hh:mm)	This is available if you selected Daily , Weekly or Monthly as your backup frequency. Select the time in hour:minute format when you want the NSA to perform the backup job.
Every how many days?	This is only available if you selected Daily as your backup frequency. Enter the interval between days when the NSA performs the backup job.
Every how many weeks?	This is only available if you selected Weekly as your backup frequency. Enter the interval between weeks when NSA performs the backup job.
Step 1: Please select the month(s) of a year	This is only available if you selected Monthly as your backup frequency. Select the month(s) when you want the NSA to perform the backup job.
Step 2: Please select the day of the month	This is only available if you selected Monthly as your backup frequency. Select the day in a month when you want the NSA to perform the backup job.
Previous	Click this to go back to the previous screen.
Done	Click this to close the screen.

10.10.8 Restore Archive Screen

Use this screen to restore previous backups made with the NSA.

10.10.9 Restore Archive: Step 1

Click **Protect > Backup** screen ([Section 10.10 on page 261](#)). You can restore a previous backup job by selecting a backup job from the list and clicking **Restore Archive**.

Figure 147 Protect > Backup > Restore Archive: Step 1

The screenshot shows a web interface titled "Restore". Underneath, it says "Step 1. Select Restore Point". There is a tab labeled "Job Information" which is active. Below the tab is a table with the following data:

Job Name:	Example F
Job Description:	Example F
Backup Type:	full
Scheduler Information:	every month

Below this table is another table with a header "Restored Time" and one row containing the value "2009-06-09 16:19:31". A "Next" button is located in the bottom right corner of the screen.

The following table describes the labels in this screen.

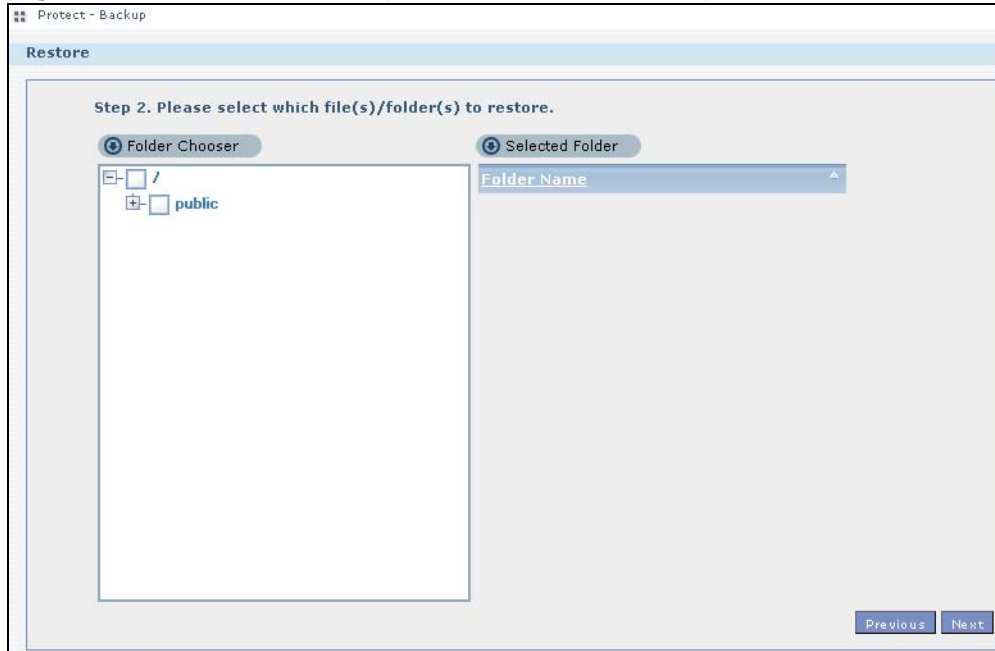
Table 74 Protect > Backup > Restore Archive: Step 1

LABEL	DESCRIPTION
Step 1. Select Restore Source	Select a previous archive backup that you want to restore to the NSA.
Job Information	
Job Name	This is the name to identify the backup job.
Job Description	This is a short description (up to 100 keyboard characters) for the backup job.
Backup Type	This is the type of backup implemented for the backup job.
Scheduler Information	This field displays the backup's frequency.
Restored Time	Select a previous backup in the list that you want to restore to your NSA.
Next	Click this to go to the next screen.

10.10.10 Restore Archive: Step 2

Use this screen to select the folder where the archive you want to restore is located.

Figure 148 Protect > Backup > Restore Archive: Step 2



The following table describes the labels in this screen.

Table 75 Protect > Backup > Restore Archive: Step 2

LABEL	DESCRIPTION
Step 2. Please select which file(s)/folder(s) to restore.	
Folder Chooser	Select the folder where the backup you want to restore is located.
Selected Folder	This shows the path of the folder you selected.
Previous	Click this to go back to the previous screen.
Next	Click this to go to the next screen.

10.10.11 Restore Archive: Step 3

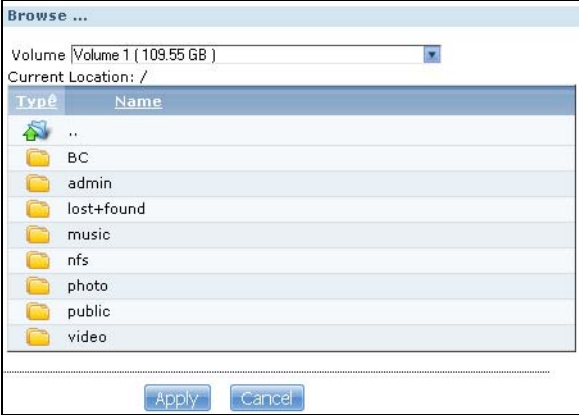
Use this screen to select the location in the NSA where you want to restore your backup.

Figure 149 Protect > Backup > Restore Archive: Step 3



The following table describes the labels in this screen.

Table 76 Protect > Backup > Restore Archive: Step 3

LABEL	DESCRIPTION
	Step 3. Set a restore target and start restoring
Original Location	Select this to restore the files to their original location in the NSA.
Other Location	<p>Click this to select a folder where you want to place the restored files. Click Browse to open the following screen.</p>  <ul style="list-style-type: none"> • Volume - Select a volume from the list. • Current Location - This is the location of the selected folder. • Type - This identifies the item as a file or folder. • Name - This is the name of the folder/file. <p>Click Apply to save your settings and Cancel to close the screen.</p>
Previous	Click this to go back to the previous screen.
Done	Click this to run the restore process and go back to the Backup screen.

10.11 Restore Screen

Use this screen to restore previous backups made with the NSA, including archives and folders from internal, external or remote NSAs to the NSA.

10.11.1 Restore: Step 1

You can access this screen by clicking **Protect > Restore**.

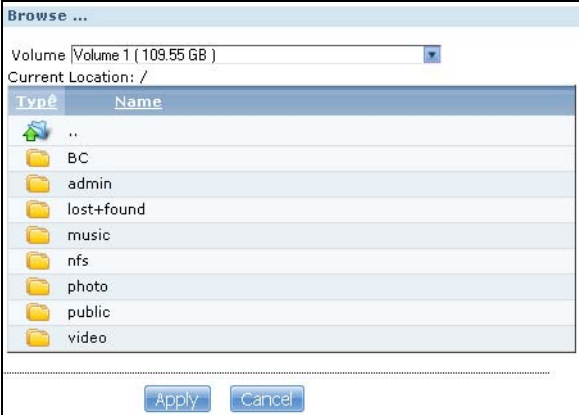
Figure 150 Protect > Restore: Step 1

The following table describes the labels in this screen.

Table 77 Protect > Restore: Step 1

LABEL	DESCRIPTION
Step 1. Select Restore Source	Select a previous archive backup that you want to restore to the NSA. Select Remote NSA if the file is in another NSA in the network that you used for your backup. Fill in the fields below when you choose this option. Select Internal or External Volume if you want to use another volume in the NSA or an attached USB hard disk for your backup. Click Browse to select the backup file.
IP Address	Enter the address of the NSA you want to use.
User	Enter the username you use to access the NSA.
Password	Enter the password of your NSA account.
Share Name	Enter the name of the share you want to use.
Test Connection	Click this to test your connection to the remote NSA that you have specified in the fields above.

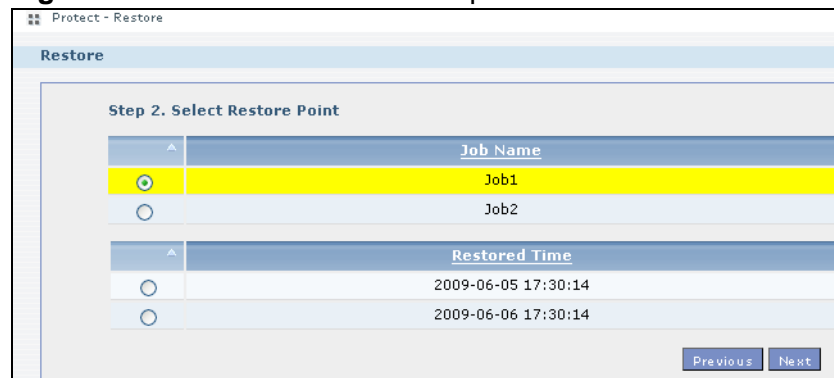
Table 77 Protect > Restore: Step 1

LABEL	DESCRIPTION
Browse	<p>Click this to select where the previous backup that you want to restore is located.</p>  <ul style="list-style-type: none"> • Volume - Select a volume from the list. • Current Location - This is the location of the selected folder. • Type - This identifies the item as a file or folder. • Name - This is the name of the folder/file. <p>Click Apply to save your settings and Cancel to close the screen.</p>
Next	Click this to go to the next screen.

10.11.2 Restore: Step 2

Select a previous archive backup that you want to restore to the NSA.

Figure 151 Protect > Restore: Step 2



The following table describes the labels in this screen.

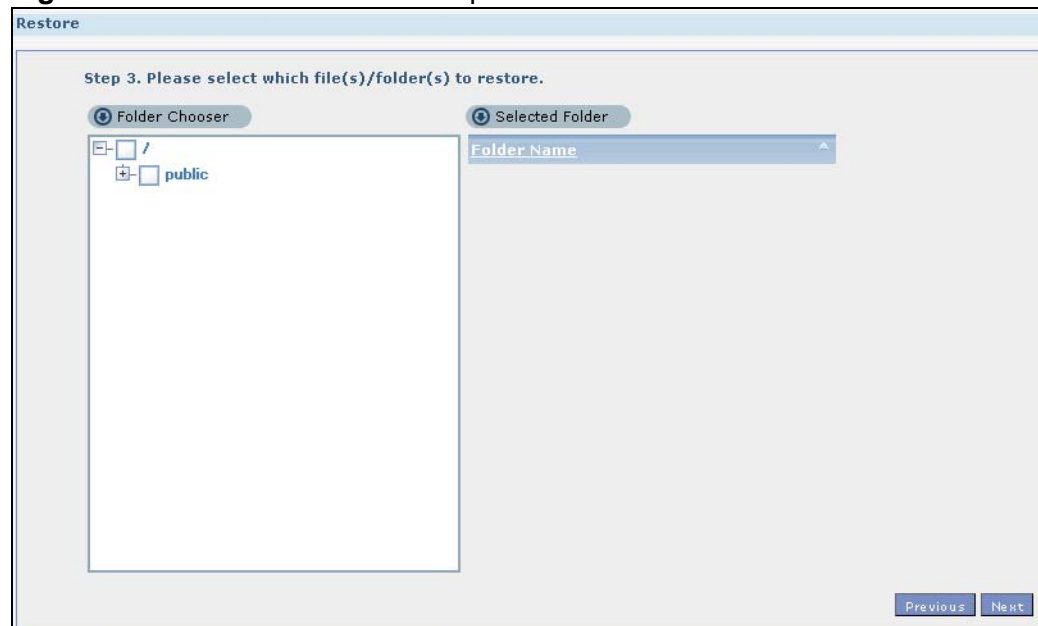
Table 78 Protect > Restore: Step 2

LABEL	DESCRIPTION
Step 2. Select Restore Point	If you selected Remote NSA for the backup you want to restore, you can see a list of all the backups you performed in the Job Name table. If you selected Internal or External Volume for the backup you want to restore, you can see a list of restore times for the backups you performed in the Restored Time table.
Job Name	Select a previous backup job in the list that you want to restore to your NSA. Once you choose a job name, all available restore times for that backup job shows in the Restored Time table.
Restored Time	Select a previous backup job in the list that you want to restore to your NSA.
Previous	Click this to go back to the previous screen.
Next	Click this to go to the next screen.

10.11.3 Restore: Step 3

Use this screen to select the folder where the archive you want to restore is located.

Figure 152 Protect > Restore: Step 3



The following table describes the labels in this screen.

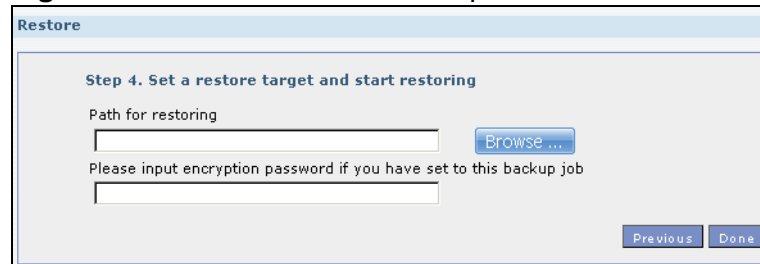
Table 79 Protect > Restore: Step 3

LABEL	DESCRIPTION
Step 3. Please select which file(s)/folder(s) to restore.	
Folder Chooser	Select the folder where the backup you want to restore is located.
Selected Folder	This shows the path of the folder you selected.
Previous	Click this to go back to the previous screen.
Next	Click this to go to the next screen.

10.11.4 Restore: Step 4

Use this screen to select the location in the NSA where you want to restore your backup.

Figure 153 Protect > Restore: Step 4



Restore

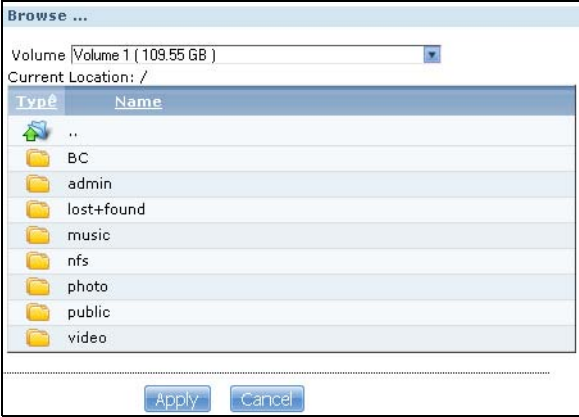
Step 4. Set a restore target and start restoring

Path for restoring

Please input encryption password if you have set to this backup job

The following table describes the labels in this screen.

Table 80 Protect > Restore: Step 4

LABEL	DESCRIPTION
Step 3. Set a restore target and start restoring	
Browse	<p>Click this to select a folder where you want to place the restored files.</p>  <ul style="list-style-type: none"> • Volume - Select a volume from the list. • Current Location - This is the location of the selected folder. • Type - This identifies the item as a file or folder. • Name - This is the name of the folder/file. <p>Click Apply to save your settings and Cancel to close the screen.</p>
Previous	Click this to go back to the previous screen.
Done	Click this to run the restore process and go back to the Backup screen.

10.12 Technical Reference

This section provides technical background information on the topics discussed in this chapter.

10.12.1 S.M.A.R.T Attributes

The following table describes some common S.M.A.R.T. attributes. If a higher or lower raw attribute value is better, it is indicated in the **BETTER** column. Since

S.M.A.R.T. attributes and their definitions vary by manufacturer, refer to the hard drive manufacturer for details about the attributes your hard drive supports.

Table 81 S.M.A.R.T. Attributes

ID	ATTRIBUTE NAME	BETTER	DESCRIPTION
01	Read Error Rate	Low	Shows the rate of hardware read errors. If this is not zero, there is a problem with the disk surface or the read/write heads.
02	Throughput Performance	High	This is the hard drive's general (overall) throughput performance. A decreasing value indicates a problem.
03	Spin-Up Time	Low	This is the average number of milliseconds the hard drive took for spindle spin up (from zero RPM to fully operational).
04	Start/Stop Count		The total number of spindle start and stop cycles.
05	Reallocated Sectors Count	Low	Total number of reallocated sectors on the hard drive. When the hard drive detects a read/write/verification error, it marks the sector as "reallocated" and transfers the data to a specially reserved (spare) area. The process is also known as remapping with "reallocated" sectors known as remaps. The more sectors the hard drive has to reallocate, the slower read and write speeds become.
06	Read Channel Margin		This is the margin of a channel when it reads data.
07	Seek Error Rate	Low	This is the rate of the magnetic heads' seek errors. A failure in the mechanical positioning system, such as servo damage or a thermal widening of the disk, results in seek errors. An increasing number of seek errors indicate the condition of the disk surface and the mechanical subsystem are worsening.
08	Seek Time Performance	High	This is an average performance indicator for the seek operations of the magnetic heads. Mechanical subsystem problems cause this value to decrease.
09	Power-On Hours (POH)	Low	This is how many hours the hard drive has been in a power-on state. The raw value lists the total number of hours (or minutes, or seconds depending on the manufacturer).
10	Spin Retry Count	Low	This is the total number of spin start retry attempts. This is the number of attempts to spin up to fully operational speed the hard drive has made when the first attempt did not succeed. An increase in this value is an indicator of hard disk mechanical subsystem problems.
11	Recalibration Retries	High	This is the number of times recalibration was requested when the first attempt did not succeed. A decrease in this value is an indicator of hard disk mechanical subsystem problems.
12	Device Power Cycle Count		This is the number of times the hard drive has gone through a full power on and power off.
13	Soft Read Error Rate	Low	This is the number of uncorrected read errors the hard drive has reported. If this is not zero, back up your data.

Table 81 S.M.A.R.T. Attributes (continued)

ID	ATTRIBUTE NAME	BETTE R	DESCRIPTION
190	Airflow Temperature	Low	This indicates the temperature of the airflow measured by a Western Digital hard drive.
190	Temperature Difference from 100	High	This indicates the value of 100 - the temperature in degrees Celsius. Manufacturers can set a minimum threshold that corresponds to a maximum temperature.
191	G-sense error rate	Low	This is the number of mistakes caused by impact loads.
192	Power-off Retract Count	Low	This is how many times the heads are loaded off the media.
193	Load/Unload Cycle	Low	This is the number of load and unload cycles into head landing zone position.
194	Temperature	Low	This is the hard drive's internal temperature.
195	Hardware ECC Recovered	High	This is the time between ECC (Error Correction Code)-corrected errors.
196	Reallocation Event Count	Low	This is the total number of reallocation (remap) operations. The raw value is the total attempts to move data from reallocated sectors to a spare area. Successful and unsuccessful attempts are both included.
197	Current Pending Sector Count	Low	This is the number of unstable sectors awaiting reallocation. If the sector is later successfully written or read, this value decreases and reallocation is not performed. Only failed write attempts cause a reallocation, not read errors. This can be difficult to test since only direct I/O writes to the disk cause reallocations, not cached writes.
198	Uncorrectable Sector Count	Low	This is the number of errors reading or writing a sector that were not correctable. An increase in this value is an indicator of disk surface defects or mechanical subsystem problems.
199	UltraDMA CRC Error Count	Low	This is the number of data transfer errors through the interface cable according to the ICRC (Interface Cyclic Redundancy Check).
200	Write Error Rate / Multi-Zone Error Rate	Low	This is the total number of errors in writing sectors.
201	Soft Read Error Rate	Low	This is the number of read/write head off-track errors. If the value is not zero, make a backup.
202	Data Address Mark Errors	Low	This is the number of data address mark errors. This could also be a different, manufacturer-specific attribute.
203	Run Out Cancel	Low	This is the number of ECC (Error Correction Code) errors.
204	Soft ECC Correction	Low	This is the number of errors corrected by software ECC (Error Correction Code).

Table 81 S.M.A.R.T. Attributes (continued)

ID	ATTRIBUTE NAME	BETTER	DESCRIPTION
205	Thermal Asperity Rate (TAR)	Low	This is the number of thermal asperity errors. Thermal asperity is a read signal spike caused by sensor temperature rise due to touching the disk surface or contaminant particles.
206	Flying Height		This is the height of the hard drive's read/write heads above the disk surface.
207	Spin High Current		This is the quantity of high current used to spin up the drive.
208	Spin Buzz		This is the number of buzz routines to spin up the drive. When the arm holding the read/write heads is stuck, the motor driving it tries to oscillate the arm to free it. This causes an audible vibration.
209	Offline Seek Performance		This is the hard drive's seek performance during offline operations. Offline operations are tests the drive does itself as opposed to those that an external diagnostic tool has it do. Seek performance is how quickly the drive moves from track to track.
220	Disk Shift	Low	This is how far the disk has moved relative to the spindle (this kind of shift is usually due to shock).
221	G-Sense Error Rate	Low	This is the number of errors that have resulted from external vibration and shock.
222	Loaded Hours		This is how long the hard drive has operated under data load (this requires movement of the magnetic head armature).
223	Load/Unload Retry Count		This is how many time the magnetic head has changed position.
224	Load Friction	Low	This is resistance caused by friction in mechanical parts during operation.
225	Load/Unload Cycle Count	Low	This is the total number of load cycles.
226	Load 'In'-time		This is the total time that the magnetic heads actuator has had a load (not been in the parking area).
227	Torque Amplification Count	Low	This is the number of attempts to compensate for variations in platter speed.
228	Power-Off Retract Cycle	Low	This is how many times the magnetic armature was automatically retracted because the power was cut.
230	GMR Head Amplitude		This is the amplitude of thrashing (or the distance of repetitive forward and reverse head motion).
231	Temperature	Low	This is the hard drive's temperature.
240	Head Flying Hours		This is the total time that the head has been positioning.
250	Read Error Retry Rate	Low	This is the number of errors in reading from the disk.

Auto Upload

11.1 Overview

This chapter discusses the features in the **Auto Upload** screens.

The auto upload feature uploads media files stored in the NSA to the Flickr and/or YouTube sharing websites. Besides web publishing and media server, auto upload is another convenient way to share media files with your friends and family. You can link the NSA to your Flickr and/or YouTube account and select shares for the NSA to upload. The NSA uploads the media files stored in the specified shares to your Flickr and/or YouTube account. When you add new files to the specified shares, the NSA also automatically uploads the new files to your Flickr and/or YouTube account.

11.2 What You Can Do

- Use the **Flickr/YouTube** screen ([Section 11.4 on page 286](#)) to upload photos and videos to your Flickr and YouTube accounts.
- Use the **FTP Uploadr** screen ([Section 11.5 on page 296](#)) to upload files to FTP servers.

11.3 What You Need to Know

FTP

File Transfer Protocol (FTP) is a file transfer service that operates on the Internet. A system running the FTP server accepts commands from a system running an FTP client. FTP is not a secure protocol. Your file transfers could be subject to snooping.

FTPES (File Transfer Protocol over Explicit TLS/SSL)

File Transfer Protocol over Explicit TLS/SSL (FTPES) is a file transfer service that uses TLS (Transport Layer Security) or Secure Socket Layer (SSL) for secure transfers across the Internet.

11.4 The Flickr/YouTube Screen

Use this screen to upload photos and videos to your Flickr and YouTube accounts.

Click **Applications > Auto Upload > Flickr/YouTube** to open the following screen.

Figure 154 Applications > Auto Upload > Flickr/YouTube



The following table describes the labels in this screen.

Table 82 Applications > Auto Upload > Flickr/YouTube

LABEL	DESCRIPTION
Flickr/YouTube	
Disable/Enable	Select a service from the list and click this to turn the service on or off. If you disable the service and add more files to the watch folder(s), the NSA will not auto upload these files. However, the NSA still uploads any files added before you turned off the service.
Pause/Resume	Select a service from the list and click this to pause or resume the auto upload feature.
Config	Select a service from the list and click this to manage the service's settings.
Status	This field displays the service's status. The service may be Enabled , Disabled , Uploading or Paused .
Service Name	This field displays the name of a sharing website to which the NSA can automatically upload files.
Account Information	This field displays the username and related information of the account to use with the auto upload feature.

11.4.1 Configuring the Flickr Settings

In the Applications > Auto Upload > Flickr/YouTube screen, select Flickr from the list and then click the Config button.

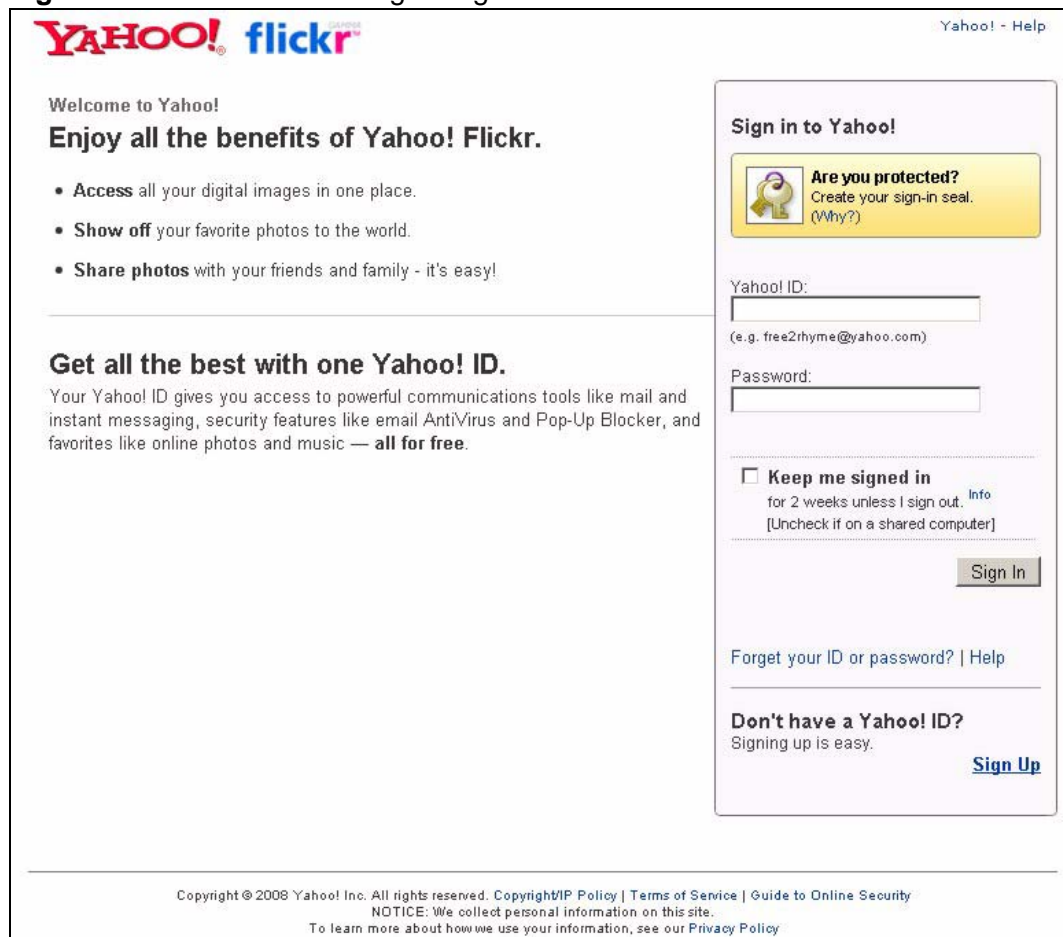
The following screen displays if you have not authorized the NSA to use a Flickr account. Click **OK** to continue the authorization process.

Figure 155 Linking NSA to Flickr



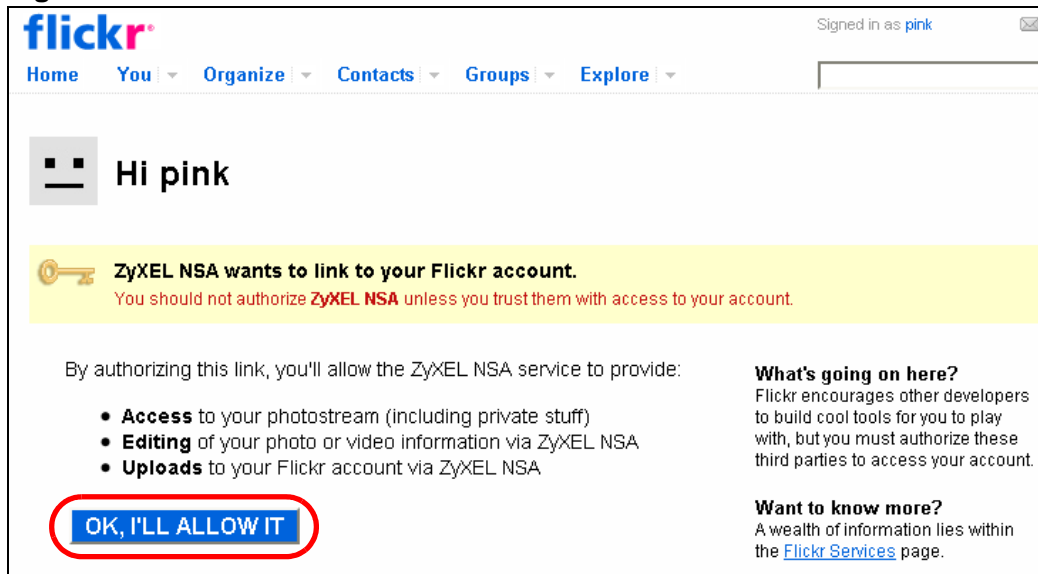
The web browser opens the Yahoo! Flickr login page. Enter your Yahoo account's information and click **Sign In**.

Figure 156 Yahoo! Flickr Login Page



The following page displays asking for your authorization. Click **OK, I'LL ALLOW IT** to establish a link between the NSA and your Flickr account.

Figure 157 Flickr Authorization



A confirmation page displays indicating successful authorization. Return to the NSA web configurator. Click **Get Ready** in the following screen to complete the authorization process.

Figure 158 Confirming Flickr Authorization



Once the NSA is associated with your Flickr account, you can configure auto upload settings in the following screen.

Figure 159 Applications > Auto Upload > Flickr/YouTube > Config (Flickr)

Applications - Auto Upload - Flickr/YouTube

Flickr Account Configuration

Username: stopitswine

Photo Space Usage: 0% (0.00 Bytes) Used
100.00% Free

Video Files Usage: Uploaded: 0, Remain: 2 [Switch User](#)

Folder Selection

Folder Watch List

Status	Share Name	Path	Action
	photo	/	

[Add](#)

Note:
Only the following file formats will be automatically uploaded: bmp, gif, jpeg, jpg, png, tif, tiff, 3gp, 3g2, avi, mov, mpeg, mpg, wmv, mp4

Grace Period

The time the system will wait before a newly added media file is saved in a watched folder.

Grace Period: minutes

Default Privacy

Who can see your media files on Flickr?

Only You
 Your friends
 Your family
 Anyone
 Hide from public site area?

Default Safety Level

Safe
 Moderate
 Restricted

Note:
Video on Flickr may only include "Safe" or "Moderate" content. "Restricted" video content is not allowed on Flickr and will be removed.

Default Content Type

Photos / Videos
 Screenshots / Screencasts
 Illustration / Art / Animation / CGI

[Apply](#) [Reset](#)

The following table describes the labels in this screen.

Table 83 Applications > Auto Upload > Flickr/YouTube > Config (Flickr)



LABEL	DESCRIPTION
Flickr Account Configuration	
Username	This field displays the Flickr account authorized for the auto upload feature.
Photo Space Usage	This shows how much storage space for photos (in size and percentage) you have used and how much space is still available on your Flickr account.
Video Files Usage	This shows how many videos you have uploaded and how many videos you can still upload to your Flickr account.
Switch User	Click this to use a different Flickr account for the auto upload feature.
Folder Selection	
Folder Watch List	This table displays a list of shares and folders selected for auto upload. Files stored in these locations are uploaded to your Flickr account.
Status	This indicates whether the folder or share is available.  represents a valid folder. The folder is available for auto upload.  represents a missing folder. The share may be deleted from the NSA, or the hard disk was removed from the NSA.
Share Name	This is the share selected for auto upload.
Path	This is the path of a folder selected for auto upload. The NSA only uploads files stored in the specified share or folder to your Flickr account.
Action	Use the Remove icon to remove a folder from the Folder Watch List .

Table 83 Applications > Auto Upload > Flickr/YouTube > Config (Flickr) (continued)

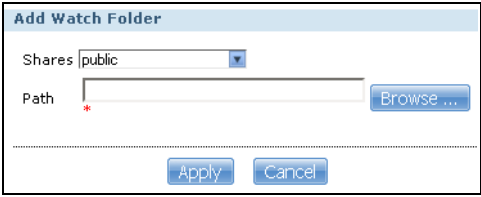
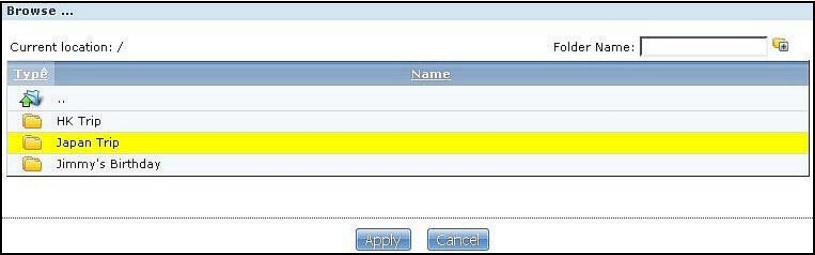

LABEL	DESCRIPTION
Add	<p>Click this to open the following screen where you can set a folder that contains files you want the NSA to automatically upload.</p>  <ul style="list-style-type: none"> • Share - Select the share from the list. • Path - Type the folder location in the share directly or click Browse to open the following screen and navigate to the folder's location.  <ul style="list-style-type: none"> • Current Location - This is the location of the selected folder. • Folder Name - Enter a new folder name and click  to create it. • Type - This is the type of the folder/file. • Name - This is the name of the folder/file. <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the Path field. All contents within the specified share are automatically selected.</p> <p>Click Apply to save your settings and Cancel to close the screen.</p>
Grace Period	
Grace Period N minutes	Specify how long the NSA should wait when you add a new file for auto upload. For example, if you set the grace period to 5 minutes, the NSA uploads a new file after it has been in a watched folder for 5 minutes. You can choose from a range of 1 to 10080 minutes (up to one week).
Default Privacy	
Who can see your media files on Flickr?	<p>Determine who has the right to see files uploaded to your Flickr account.</p> <p>Select Only You if you do not want anyone else to see your files. You may also restrict the access to Your friends and/or Your family. You can set up a friend/family list in your Flickr account.</p> <p>Select Anyone to allow everyone to see your files.</p>
Hide from public site area	Check this option to prevent others from finding your files when they perform a search in the Flickr website.

Table 83 Applications > Auto Upload > Flickr/YouTube > Config (Flickr) (continued)

LABEL	DESCRIPTION
Default Safety Level	Assign a safety level to your files. Select Safe if the contents of your files are suitable for the general public. Select Moderate if the contents of your files may be offensive to some people. Select Restricted if the contents of your files are not suitable for certain people, such as children or your colleagues.
Default Content Type	Select a content type for your files. You can choose Photo/Video , Screenshots/Screencasts , or Illustration/Art/Animation/CGI .
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

11.4.2 Configuring the YouTube Settings

In the **Applications > Auto Upload > Flickr/YouTube** screen, select YouTube from the list and then click the **Config** button.

Note: Your YouTube account must be associated with a Google account.

Get a Google account and use it to log into YouTube. You can then merge the existing YouTube account to your Google account.

If you have not authorized a YouTube account on the NSA, the following screen displays. Enter your Google account's e-mail address and password in the fields and click **OK** to authorize the service.

Figure 160 YouTube Account Settings

YouTube Account Settings

Email *

Password *

Note:
To use this feature you must use a Google account that is linked to your YouTube account. Please create a Google account if you do not have one. Login to YouTube using your Google account and then link your existing YouTube account or create a new YouTube account.

OK Cancel

Once the NSA is associated with your YouTube account, you can configure auto upload settings in the following screen.

Figure 161 Applications > Auto Upload > Flickr/YouTube > Config (YouTube)

Applications - Auto Upload - Flickr/YouTube

YouTube Account Configuration

Username Switch User

Folder Selection

Folder Watch List

Status	Share Name	Path	Action
	public	/C&D Top 10 Podcast	

Add

Note:

- Only the following file formats will be automatically uploaded: 3gp, asf, asx, avi, dif, dl, dv, flv, gl, mov, movie, m4v, mp4, mpe, mpeg, mpg, ogv, qt, wm, wmv, wmx, wvx
- YouTube limits the file size allowed for an uploaded video. Files exceeding the file size limit may not be uploaded successfully.

Grace Period

The time the system will wait before a newly added media file is saved in a watched folder.

Grace Period minutes

Video Category

Please select a category.

Film & Animation Autos & Vehicles
 Music Pets & Animals
 Sports Travel & Events
 Comedy People & Blogs
 News & Politics Entertainment
 Education Howto & Style
 Nonprofits & Activism Science & Technology

Default Privacy

Who can see your media files on YouTube?

Only You
 Anyone

Apply Reset

The following table describes the labels in this screen.

Table 84 Applications > Auto Upload > Config (YouTube)



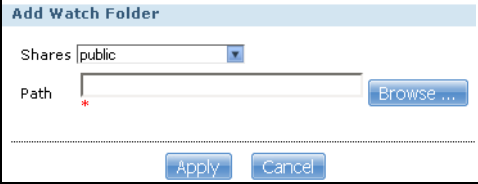
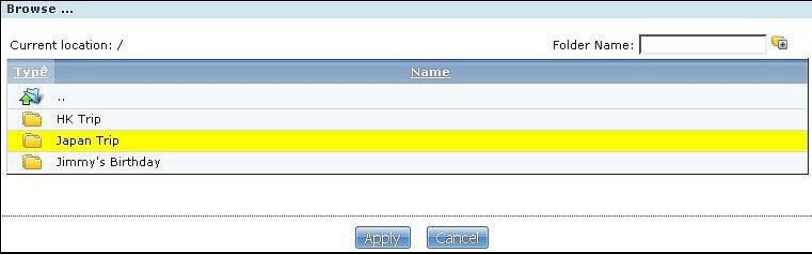

LABEL	DESCRIPTION
Youtube Account Configuration	
Username	This field displays the Youtube account authorized for the auto upload feature.
Switch User	Click this to use a different YouTube account for the auto upload feature.
Folder Selection	
Folder Watch List	This table displays a list of shares and folders selected for auto upload. Files stored in these locations are uploaded to your YouTube account.
Status	<p>This field indicates whether the share or folder is available.</p> <p> represents a valid folder. The folder is available for auto upload.</p> <p> represents a missing folder. The share may be deleted from the NSA, or the hard disk was removed from the NSA.</p>
Share Name	This field displays the share selected for auto upload.
Path	This field displays the path of a folder selected for auto upload. The NSA only uploads the files stored in the specified share or folder to your YouTube account.
Action	Use the Remove icon to delete a folder from the Folder Watch List .

Table 84 Applications > Auto Upload > Config (YouTube) (continued)

LABEL	DESCRIPTION
Add	<p>Click this to open the following screen where you can set a folder that contains files you want the NSA to automatically upload.</p>  <ul style="list-style-type: none"> • Share - Select the share from the list. • Path - Type the folder location in the share directly or click Browse to open the following screen and navigate to the folder's location.  <ul style="list-style-type: none"> • Current Location - This is the location of the selected folder. • Folder Name - Enter a new folder name and click  to create it. • Type - This is the type of the folder/file. • Name - This is the name of the folder/file. <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the Path field. All contents within the specified share are automatically selected.</p> <p>Click Apply to save your settings and Cancel to close the screen.</p>
Grace Period	
Grace Period N minutes	Specify how long the NSA should wait when you add a new file for auto upload. For example, if you set the grace period to 5 minutes, the NSA uploads a new file after it has been in a watched folder for 5 minutes. You can choose from a range of 1 to 10080 minutes (up to one week).
Video Category	Select the category that best describes the media files you want to upload.
Default Privacy	
Who can see your media files on YouTube?	<p>Determine who has the right to see files uploaded to your YouTube account.</p> <p>Select Only You if you do not want anyone else to see your files.</p> <p>Select Anyone to allow everyone to see your files.</p>
Apply	Click this to save your changes.
Reset	Click this to restore your previously stored settings.

11.5 The FTP Uploadr Screen

The FTP Uploadr feature uploads files stored in the NSA to FTP servers. Besides web publishing and media server, auto upload is another convenient way to share media files with your friends and family. You can link the NSA to the FTP server or the FTP server on another NSA and select shares or folders for the NSA to upload. The NSA uploads the files stored in the specified shares to the FTP server. When you add new files to the specified shares, the NSA also automatically uploads the new files to the FTP server.

Use this screen to configure the FTP Uploadr.

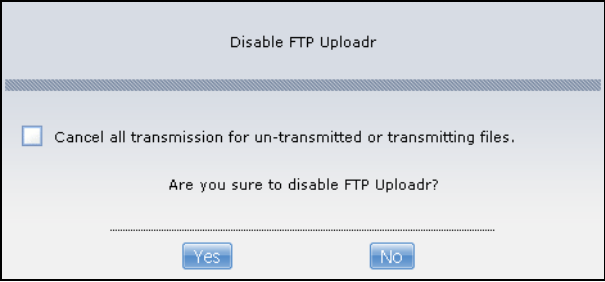

Click **Applications > Auto Upload > FTP Uploadr** to open the screen shown next.

Figure 162 Applications > Auto Upload > FTP Uploadr

Domain Name/IP Address	Port Number	Remote Path	Account Name	Description
ftp.example.com	21	/music	user	testing

The following table describes the labels in this screen.

Table 85 Applications > Auto Upload > FTP Uploadr

LABEL	DESCRIPTION
Enable FTP Uploadr	<p>Use the check box to enable or disable the FTP Uploadr. Click Apply to save your changes.</p> <p>When you disable the FTP Uploadr, a screen opens requesting confirmation. Select the check box to stop any current or queued uploads. If you do not select the check box, the FTP Uploadr will finish uploading the files that are already in the queue list. Clicking Yes will disable the FTP Uploadr.</p> 
Add Server	Click this to add a target FTP server entry. See Section 11.5.1 on page 298 for more details.
Preferences	Click this to manage the settings of the FTP Uploadr.
Edit Server	Select a server from the list and click this to edit the FTP server entry.
Delete Selected Server(s)	<p>Select a server from the list and click this to remove the FTP server entry.</p> 
Server Information	Select a server from the list and click this to display the status and settings about the FTP server.
Domain Name/IP Address	This is the domain name or IP address of the FTP server.
Port Number	This is the port number used by the FTP server.
Remote Path	The NSA automatically uploads files to this location of the FTP server.
Account Name	This is the login account for the FTP server.
Description	This is the information related to the FTP server.

11.5.1 Adding or Editing an FTP Server Entry

Use this screen to add or edit an FTP server entry for auto upload.

In the **FTP Uploadr** screen, click the **Add Server** or **Edit Server** button to open the following screen.

Figure 163 Applications > Auto Upload > FTP Uploadr > Add or Edit a Server

The following table describes the labels in this screen.

Table 86 Applications > Auto Upload > FTP Uploadr > Add or Edit a Server

LABEL	DESCRIPTION
Domain Name/IP Address	Enter the domain name or IP address of the FTP server.
Account Name	Enter the account name used to access the FTP server.
Password	Enter the password associated with the account name.
Port Number	Enter the port number for the FTP server.
Remote Path	Enter the path of the FTP server where the NSA automatically uploads files.
Description	Enter additional information about this FTP server.
Test Connection	Click this to test your settings and check whether you can use the settings to connect to the FTP server.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

11.5.2 The FTP Uploadr Preferences Screen

Use this screen to configure the general settings for the FTP Uploadr.

In the **FTP Uploadr** screen, click the **Preferences** icon to open the following screen.

Figure 164 Applications > Auto Upload > FTP Uploadr > Preferences

The screenshot shows the 'FTP Uploadr Preferences' screen. At the top, there is a 'Folder Watch List' section with a table header containing 'Status', 'Share Name', 'Path', and 'Action'. Below the header, it states 'There are currently no folders on the watch list.' and includes an 'Add' button. The 'Settings' section below contains two configuration items: 'Grace Period' (set to 15 minutes) and 'Bandwidth Limit' (set to 0 KB/s). At the bottom of the settings area are 'Apply', 'Reset', and 'Close' buttons.

The following table describes the labels in this screen.

Table 87 Applications > Auto Upload > FTP Uploadr > Preferences



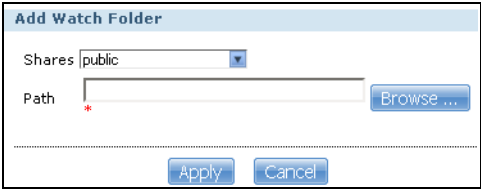


LABEL	DESCRIPTION
Folder Watch List	
Status	This field indicates whether the share or folder is available.  represents a valid folder. The folder is available for auto upload.  represents a missing folder. The share may be deleted from the NSA, or the hard disk was removed from the NSA.
Share Name	This is the share selected for auto upload.
Path	This is the path of a folder selected for auto upload. The NSA only uploads files stored in the specified share or folder to your FTP server.
Action	Use the Remove icon to delete a folder from the Folder Watch List .

Table 87 Applications > Auto Upload > FTP Uploadr > Preferences (continued)

LABEL	DESCRIPTION
Add	<p>Click this to open the following screen where you can set a folder that contains files you want the NSA to automatically upload.</p>  <ul style="list-style-type: none"> • Share - Select the share from the list. • Path - Type the folder location in the share directly or click Browse to open the following screen and navigate to the folder's location.  <ul style="list-style-type: none"> • Current Location - This is the location of the selected folder. • Folder Name - Enter a new folder name and click  to create it. • Type - This is the type of the folder/file. • Name - This is the name of the folder/file. <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the Path field. All contents within the specified share are automatically selected.</p> <p>Click Apply to save your settings and Cancel to close the screen.</p>
Settings	
Grace Period	Specify how long the NSA should wait when you add a new file for auto upload. For example, if you set the grace period to 5 minutes, the NSA uploads a new file after it has been in a watched folder for 5 minutes. You can choose from a range of 1 to 10080 minutes (up to one week).
Bandwidth Limit	<p>Enter the maximum upload rate for auto upload. You can choose from a range of 0 to 100,000 KB/s. Enter 0 if you do not want to set any limit.</p> <p>Use this to leave bandwidth on your network connection for other traffic, especially if your Internet connection has restricted upload speed.</p>
Apply	Click this to save your changes in this section.
Reset	Click this to restore previously saved settings.
Close	Click this to return to the previous screen without saving.

12.1 Overview

This chapter introduces the **Users** screens of the NSA. Use the **Users** screens to create and manage administrator and user accounts.

Administrators can:

- Configure and manage the NSA.
- Create volumes, shares, and user accounts.
- Assign individual users specific access rights for specific shares.

Users are people who have access rights to the NSA and can store files there for later retrieval. A user can:

- Manage shares that he owns.
- Change his own password.
- Access the contents of other shares to which he is given access rights.

12.2 What You Can Do

- Use the main **Users** screen ([Section 12.3 on page 302](#)) to display a list of user accounts created on the NSA.
- Use the **Add User** screen ([Section 12.3.2 on page 304](#)) to create new user accounts.
- Use the **Edit User** screen ([Section 12.3.2 on page 304](#)) to edit the properties of an existing account.
- Use the **User Info** screen ([Section 12.4 on page 306](#)) to display the amount of volume space used by a selected account and the account's membership in any groups.

12.3 The Users Screen

Click **Sharing > Users** to display the screen shown next.

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

Figure 165 Sharing > Users



The following table describes the labels in this screen.

Table 88 Sharing > Users


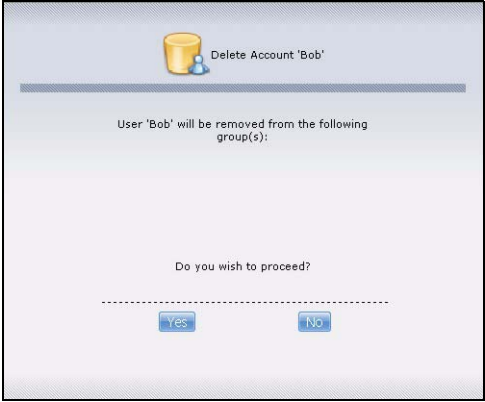
LABEL	DESCRIPTION
Add User	Click this to open a screen where you can configure a new user account. Refer to Section 12.3.2 on page 304 to see the screen.
Search	Click this to display a search field. Type in the name of an account and then click Search to look up the account you specified. Click Clear to close the search function. 
Edit User	Select an account and click this to open a screen where you can edit the properties of the account. Refer to Section 12.3.2 on page 304 to see the screen.



Table 88 Sharing > Users (continued)

LABEL	DESCRIPTION
Delete Selected Users	<p>Select an account and click this to open a screen where you can delete the user account.</p> 
User Info	<p>Select an account and click this to open a screen displaying the amount of storage space used by the account. You can also check the account's membership in any groups.</p> <p>Refer to Section 12.4 on page 306 to see the screen.</p>
Display Number	Click the drop-down menu to set how many accounts you want to display in one screen.
Go to Page	Click the drop-down menu to display and access more user accounts.
User Type	This field displays whether the account is an administrator account or a user account.
Username	This field displays the username of each account.

12.3.1 User Icons

The following table describes the user icons.

Table 89 User Icons

ICON	DESCRIPTION
	The blue icon is for an administrator account.
	The green icon is for a user account.

12.3.2 Adding or Editing an Account

Use this screen to create or edit a NSA user account with NSA access password.

Click the **Add User** button in the **Users** screen to open the following screen. Click the **Edit User** button in the screen shown previously to edit an existing account.

Figure 166 Sharing > Users > Add or Edit a User

The following table describes the labels in this screen.

Table 90 Users > Add or Edit a User

LABEL	DESCRIPTION
Username	Type a name from 1 to 32 single-byte (no Chinese characters allowed for example) ASCII characters. See Section 12.3.3 on page 305 for more details on usernames.
New 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.
Password (Confirm)	You must type the exact same password that you just typed in the above field.
Quota (per volume)	Select the volume in which you want the user's files to be stored. Enter how much space (in megabytes) you want to allow for the user to store files.
Account Type	Select Administrator to give the account full configuration and management access to the NSA. Select User to give the account basic access rights to the NSA and allow the user to manage his own shares, change his own password, and access the contents of other shares to which he is given access rights.
Group Membership	

Table 90 Users > Add or Edit a User (continued)

LABEL	DESCRIPTION
Available Group(s)	This field lists the groups created on the NSA to which the selected account does not belong.
Group Membership	This field lists the groups that the selected account belongs to.
Add Selected Group(s)	Select a group from the Available Groups list and click this to add the account to that group.
Remove Selected Group(s)	Select a group from the Group Membership list and click this to remove the account from that group.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

12.3.3 Usernames

Enter a username 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 username can only contain the following characters:

- Alphanumeric A-z 0-9. Unicode usernames are supported with CIFS logins, but not FTP or web configurator logins.
- Spaces
- _ [underscores]
- . [periods]
- - [dashes]

Other limitations on usernames are:

- All leading and trailing spaces are removed automatically.
- Multiple spaces within names are converted to a single space.
- Usernames are case insensitive. The username cannot be the same (no matter the letter case) as an existing user. For example, if a user exists with the name 'BOB', you cannot create a 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 username cannot be the same as a system username such as **ANONYMOUS-FTP** nor be the same as an existing user. Other reserved usernames that are not allowed are:
 - bin
 - daemon
 - ftp
 - anonymous-ftp

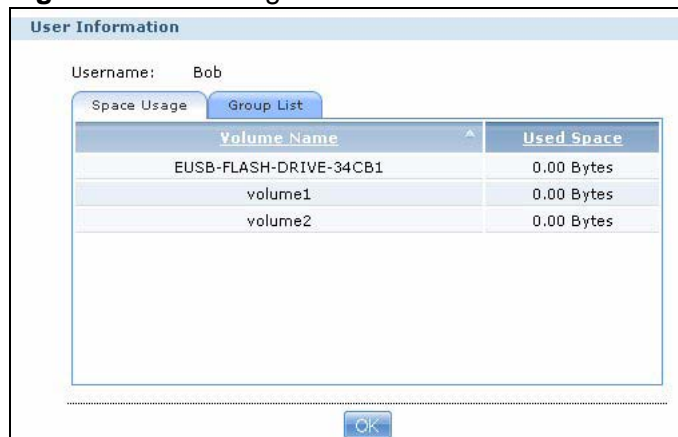
- anonymous
- nobody
- root
- pc-guest
- admin
- password

12.4 Displaying User Info

Use this screen to display a user's information.

In the **Users** screen, select an account and click **User Info** to open the following screen.

Figure 167 Sharing > Users > User Info



The following table describes the labels in this screen.

Table 91 Sharing > Users > User Info

LABEL	DESCRIPTION
Username	This field displays the selected username.
Space Usage	Click this to display the amount of volume space used by the selected account.
Group List	Click this to display the selected user's group membership.
Volume Name	This field displays the volume(s) created on the NSA.
Used Space	This field displays how much storage space the selected account is currently using. This only applies for files that the user saved onto the NSA while logged in with that username.
Group Name	This shows when you click the Group List tab. This displays the list of groups to which the selected user belongs.
OK	Click this to close the current screen.

Groups

13.1 Overview

This chapter introduces the **Groups** screens. Use the **Groups** screens to create and manage groups. You can assign users to groups and grant individual groups access rights to specific shares.

13.2 What You Can Do

- Use the main **Groups** screen ([Section 13.3 on page 307](#)) to display and manage a list of groups created on the NSA.
- Use the **Add Group** screen ([Section 13.3.1 on page 309](#)) to create new groups.
- Use the **Edit Group** screen ([Section 13.3.1 on page 309](#)) to edit the properties of an existing group.

13.3 The Groups Screen

Use this screen to create and manage groups.

Click **Sharing > Groups** to display the screen shown next.

Figure 168 Sharing > Groups



The following table describes the labels in this screen.

Table 92 Sharing > Groups

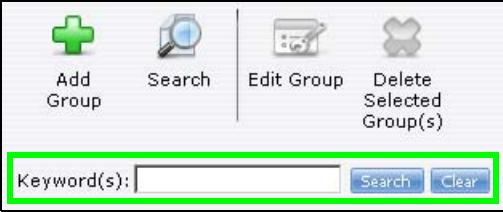
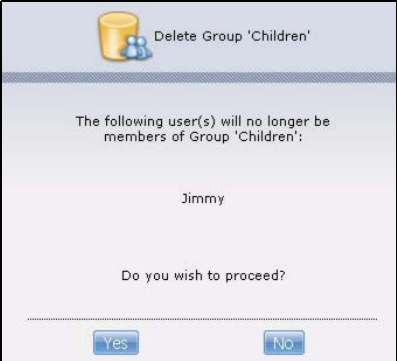

LABEL	DESCRIPTION
Add Group	Click this to open a screen where you can configure a new group.
Search	<p>Click this to display a search field. Type the name of a group and then click Search to look up the group you specified. Click Clear to close the search function.</p> 
Edit Group	Select a group and click this to open a screen where you can edit the properties of the selected group.
Delete Selected Group(s)	<p>Select a group and click this to open a screen where you can delete the group.</p> 

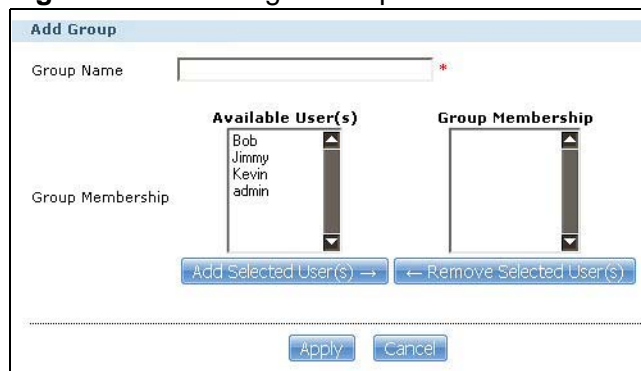
Table 92 Sharing > Groups (continued)

LABEL	DESCRIPTION
Display Number	Click the drop-down menu to set how many groups you want to display in one screen.
Go to Page	Click the drop-down menu to select a page number. Jump to a different page to display and access more groups.
Status	 This field displays the group icon.
Group Name	This field displays the group names created on the NSA.

13.3.1 Adding or Editing a Group

Use this screen to create or edit a NSA group.

Click the **Add Group** button in the **Groups** screen to open the following screen. Click the **Edit Group** button in the screen shown previously to edit an existing group.

Figure 169 Sharing > Groups > Add or Edit a Group


The following table describes the labels in this screen.

Table 93 Sharing > Groups > Add or Edit a Group

LABEL	DESCRIPTION
Group Name	Type a name from 1 to 32 single-byte (no Chinese characters allowed for example) ASCII characters. See Section 13.3.2 on page 310 for more details on group names.
Group Membership	Use this field to assign group membership to individual users.
Available User(s)	This field lists the user accounts created on the NSA that are not members of the current group.
Group Membership	This field lists the user accounts added to the group.
Add Selected User(s)	Select a user account from the Available Users list and click this to add the account to the group.
Remove Selected User(s)	Select a user account from the Group Membership list and click this to remove the account from the group.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

13.3.2 Group Names

Enter a group name from 1 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 group name can only contain the following characters:

- Alphanumeric A-z 0-9. Unicode usernames are supported with CIFS logins, but not FTP or web configurator logins.
- 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 letter case) as an existing group. For example, if a group exists with the name 'FAMILY', you cannot create a group named 'family'.
- The group name cannot be the same as a system group name such as **EVERYONE** nor be the same as an existing group. Other reserved groups names that are not allowed are:
 - nobody
 - root
 - everyone

Shares

14.1 Overview

A share is a set of access permissions mapped to a specific folder on a volume. It is equivalent to the Windows concept of a shared folder. You can map a share to a network drive for easy and familiar file transfer for Windows users.

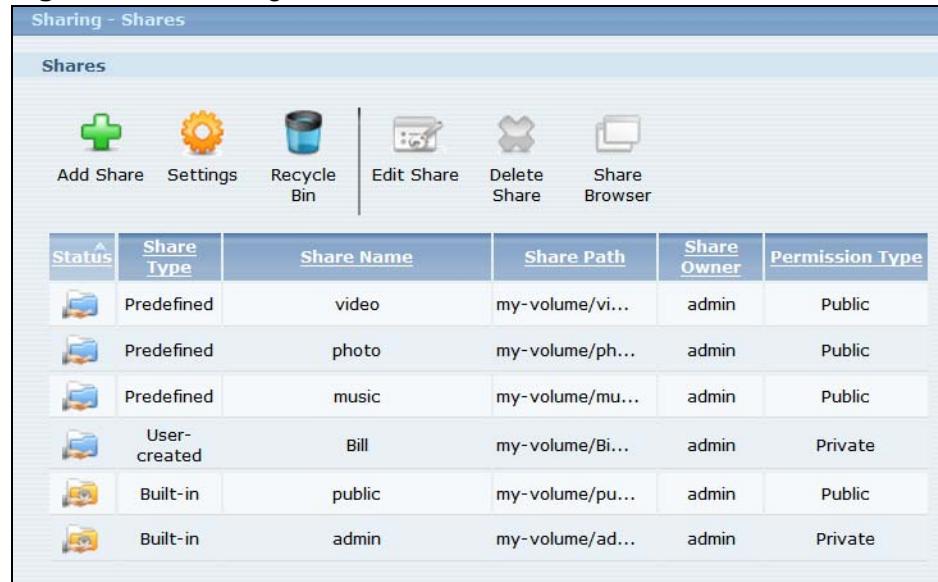
14.2 What You Can Do

- Use the **Shares** screen ([Section 14.3 on page 312](#)) to navigate a list of shares created on the NSA.
- Use the **Add Shares** screen ([Section 14.3.1 on page 314](#)) to create additional shares on the NSA.
- Use the **Share Settings** screen ([Section 14.4 on page 316](#)) to turn support for Windows offline file synchronization on or off.
- Use the **Recycle Bin** screen ([Section 14.5 on page 318](#)) to configure and clean up the recycle bins.
- Use the **Edit Share** screen ([Section 14.3.1 on page 314](#)) to edit a share's properties.
- Use the **Share Browser** screen ([Section 14.6 on page 319](#)) to navigate, add and edit the contents in a share.

14.3 The Shares Screen

Click **Sharing > Shares** in the navigation panel to open the following screen. This screen lists all shares created on the NSA.

Figure 170 Sharing > Shares



The following table describes the labels in this screen.

Table 94 Sharing > Shares







LABEL	DESCRIPTION
Add Share	Click this to create a new share.
Settings	Click this to turn support for Windows offline file synchronization on or off.
Recycle Bin	Click this to configure recycle bins.
Edit Share	Select a share and click this to edit the share.
Delete Share	Select a share and click this to remove or restrict access to the share. 
Share Browser	Select a share and click this to browse the share's contents.

Table 94 Sharing > Shares (continued)

LABEL	DESCRIPTION
Status	<p>This field displays the share icons.</p> <p> represents a Built-in share on a volume on the internal hard drives.</p> <p> represents a Predefined or User-Created share on a volume on the internal hard drives.</p> <p> represents an Auto or User-Created share on a volume on the external (USB) devices.</p> <p> represents a disabled share that no user can access.</p> <p> represents a missing share. The NSA cannot find the hard disk associated with the share (the disk may be removed from the NSA for example). You may install the disk back to the NSA to recover the share, or you may delete the share from the NSA.</p>
Share Type	<p>This field displays Built-in for system shares. You cannot delete these shares (these are the public and admin shares).</p> <p>This field displays Predefined for default shares. You cannot delete these shares (these are the video, music, and photo shares).</p> <p>This field displays User-created for shares that an administrator has created. You can delete these shares.</p> <p>This field displays Auto for shares that are automatically created on an external (USB) device when a user plugs in the device.</p>
Share Name	This field displays the share's names.
Share Path	This field displays the share's file path, for example, volume1/music.
Share Owner	This is the name of the user account to which this share belongs.
Permission Type	<p>This field displays the access permission of a share.</p> <p>Everyone on the network can access a Public share.</p> <p>Only the share owner can access a Private share.</p> <p>An Advanced share allows you to assign specific access rights (read-only for example) to individual users/groups.</p>

14.3.1 Adding or Editing Share

Click **Add Share** to create a new share. In the **Shares** screen, select a share and click **Edit Share** to open the following screen. Use this screen to create or edit a share.

Figure 171 Shares > Add Share (or Edit Share)

The following table describes the labels in this screen.

Table 95 Shares > Add Share (or Edit Share)

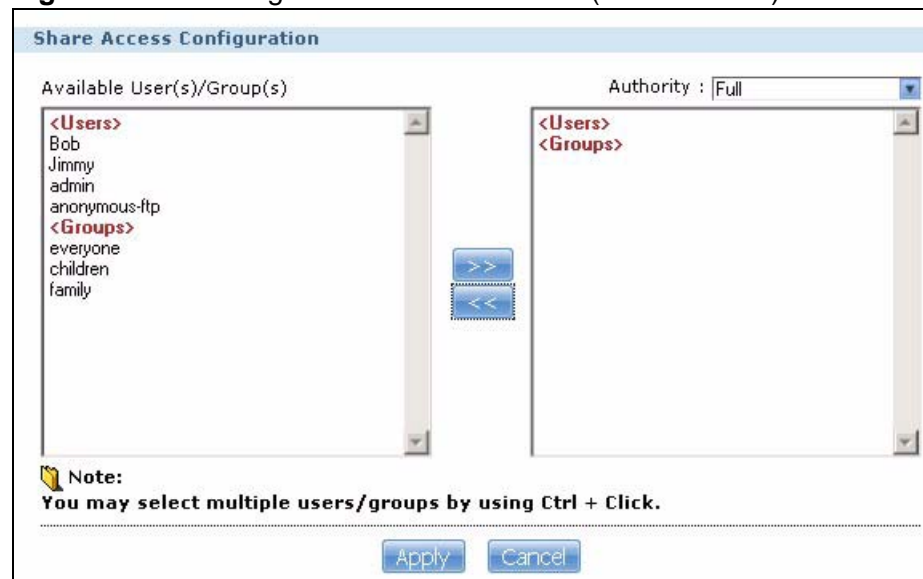
LABEL	DESCRIPTION
Share Name	Type a share name from 1 to 239 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing share. See Section 3.4.6 on page 62 for more information on share names.
Volume	You should have already created volumes (a single accessible storage area with a single file system) on the NSA. Select the one that contains the folder that you want to share out. You cannot modify this when editing a share.
Make this share owned by	Select the administrator or user account that can own (manage) this share. The share owner controls access rights to the share.
Enable this share	Click this to allow access to this share.
Enable Recycle Bin	Click this to activate the recycle bin. When you delete a file from this share, a recycle folder is created to store the deleted item.
Publish this share to Media Server	This shows only when you enable the Media Server (Section 9.5 on page 190). Select this option to have the NSA share files in this folder with media clients. The media clients do not have to use a password to play the shares you publish.
Publish this share to Web	This shows only when you enable the Web Publish (Section 9.7 on page 204). Select this option to let people use a web browser to access this share's files without logging into the Home screens.

Table 95 Shares > Add Share (or Edit Share) (continued)

LABEL	DESCRIPTION
Share Access	Assign access rights (full, read only or deny) to users or groups. If you publish the share to the media server or the web, all users will have at least read-only access to the share, regardless of what you configure here. Keep it private to owner means only the share owner (selected above) can access the share. Make it Public means every user (including people who do not have accounts on the NSA) can access the share. Advanced allows you to assign specific access rights (full, read only or deny) to individual users/groups.
Edit	This button is available only when you select Advanced share access. Click this to configure advanced share access rights.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.



14.3.2 Configuring Advanced Share Access

In the **Sharing > Shares > Add Share** or **Edit Share** screen, select **Advanced** from the **Share Access** drop-down list. Click **Edit** to open the following screen. Use this screen to configure share access rights for individual users and groups.

Figure 172 Sharing > Shares > Add Share (or Edit Share) > Advanced

The following table describes the labels in this screen.

Table 96 Sharing > Shares > Add Share (or Edit Share) > Advanced

LABEL	DESCRIPTION
Available Users/Groups	This field lists the users/groups to which you can assign access rights.
Authority	<p>Use this field to assign access rights to users/groups.</p> <p>Full Control gives users/groups full access (read, write and execute) to all files contained within this share.</p> <p>Read-Only gives users/groups read-only access (they cannot modify nor execute) to all files contained within this share.</p> <p>Deny blocks access (users/groups cannot read, modify, nor execute) to all files contained within this share.</p> <p>Among all access rights, Deny has the highest priority. For example, User A belongs to Group 1. You assign User A full access rights to the Music share but deny access rights to Group 1. Then User A cannot access the Music share.</p> <p>Note: If you deny access to all users, no-one can use the share, not even the administrator.</p>
 	Click an arrow button to move users/groups between the left and right fields. Use the arrow buttons to assign access rights to users/groups.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

14.3.3 Public and ANONYMOUS Share Access Rights

If you make a share public, users do not need to log in.

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

14.4 Share Settings Screen

Windows offline file synchronization makes files on the NSA available offline by storing shared files on your computer so you can access them when you are not connected to the network. This lets you work on the files while you are not connected to the network. When you reconnect to the network, Windows uses a process called synchronization to update the files on the network with your changes. If others on the network modified the same file, you can save your version, the other version, or both.

This feature may be useful if you connect to the NSA occasionally from a remote location.

Note: Disable oplocks to improve the NSA's performance unless you need to use the Windows offline file feature. If you do use the Windows offline file feature with the NSA, use it with a share containing only the files you need to access while offline.

In the **Sharing > Shares** screen, click **Settings** to open the **Setting** screen. Enable oplocks to support Windows offline file synchronization. Disable oplocks for better NSA performance.

Figure 173 Sharing > Shares > Settings



The following table describes the labels in this screen.

Table 97 Sharing > Shares > Settings

LABEL	DESCRIPTION
Enable oplocks	Select this to let Windows users make files on the NSA available when they are not connected to it.
Disable oplocks	If you do not need files on the NSA to be available to offline users for editing, turn off oplocks to improve the NSA's performance.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

14.4.1 Using Windows Offline File Synchronization

To use Windows offline file synchronization, in Windows Explorer right click an NSA share and select **Always available offline**.

14.5 The Recycle Bin Configuration Screen

Use this screen to periodically clean up items in all recycle bins.

14.5.1 Recycle Bins

Recycle bins in the NSA help users recover accidentally deleted files or folders in the shares. When you delete an item, a recycle folder is created within the share to hold the deleted item.

Every share can have its own recycle folder. You must enable the recycle-bin function to recycle deleted items. You can configure this setting when you add or edit a share. See [Section 14.3.1 on page 314](#) for details on activating the recycle bin in a share.

Later if you want to retrieve a deleted item, you can locate the item in the recycle folder. You may move or copy the deleted item to another share.

14.5.2 Configuring Recycle Bins

In the **Sharing > Shares** screen, click **Recycle Bin** to open the following screen.

Figure 174 Sharing > Shares > Recycle Bin

The following table describes the labels in this screen.

Table 98 Sharing > Shares > Recycle Bin

LABEL	DESCRIPTION
Clean Recycle Bin every N days	Specify how often you want to clear the contents in all recycle bins. The specified days correspond to how long a file has been stored in a recycle bin. For example, if you set the interval to be 3 days, recycle bins will clean up items deleted or not accessed for 3 days. Note: Cleaning up recycle bins permanently removes the files from the NSA.
Clean all recycle bins now	Click this to immediately remove contents from all recycle bins.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

14.6 The Share Browser Screen

Use this screen to create folders, upload files, and edit files within the share.

Figure 175 Sharing > Shares > Share Browser



The following table describes the labels in this screen.

Table 99 Sharing > Shares > Share Browser

LABEL	DESCRIPTION
Create Folder	Type a folder name and click Apply to make a new folder. The name can be 1 to 239 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing folder in the same path. See Section 3.4.6 on page 62 for more information on folder names.
Upload	Click this to add files to the share. Use Browse to locate a file and click Apply to upload the file. Note that the size of each file should be less than 2 GB.

Upload Files

File 1

File 2

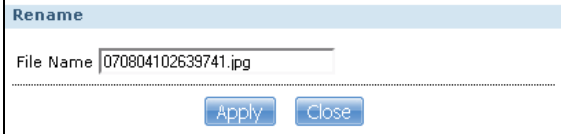

File 3

File 4

File 5

Note: The size of uploaded files can't be more than 2G.

Table 99 Sharing > Shares > Share Browser (continued)

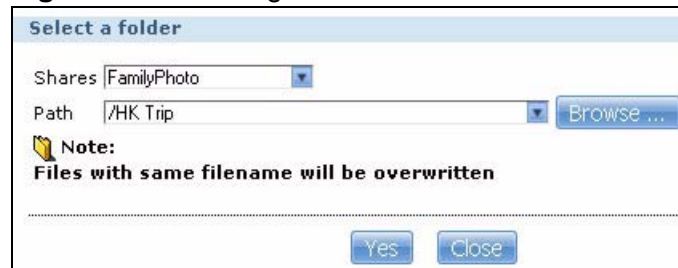
LABEL	DESCRIPTION
Rename	<p>Select a folder or file and click this to open a screen. Enter the name you want and click OK to make the changes.</p> <p>Note: When you change a file name, make sure you keep the file extension.</p> 
Delete	<p>Select a file/folder from the list and click this to open a warning screen. Click Yes to delete the file/folder, or click No to close the screen.</p> 
Move	Select a file/folder from the list and click this to relocate the file/folder to another share.
Copy	Select a file/folder from the list and click this to make a duplicate of the file/folder to another share.
Current location	This is the name of the share and folder path that you are in.
Type	<p>The icon in this column identifies the entry as a folder or a file. Click a music or video file's play icon to play the file.</p> <p>The folder with an arrow pointing up is for the link that takes you to the next higher layer in the share's folder tree.</p>
Name	This section lists the share's existing folders or files. Click to the right of the file/folder name to select the file/folder. You can also click the folder's name to navigate to a sub-folder within the folder.
Size	This field displays size of the file.
Modified Date	This field displays a file's latest modification date.
Close	Click this to close the screen.

14.6.1 Moving or Copying Files

Use this screen to move or copy files to another share.

In the **Share Browser** screen, select a file or folder and click **Move** or **Copy** to open the following screen.

Figure 176 Sharing > Shares > Share Browser > Move (or Copy)



The following table describes the labels in this screen.

Table 100 Sharing > Shares > Share Browser > Move (or Copy)

LABEL	DESCRIPTION
Shares	Select the destination share from the drop-down list.
Path	This field displays the share folder's path. You can use Browse to find or create a folder on the NSA or type the location of the folder using forward slashes as branch separators.
Browse	<p>Click this to open the following screen and navigate to the location of the file/folder.</p> <ul style="list-style-type: none"> • Current Location - This is the location of the selected folder. • Folder Name - Enter a new folder name and click to create it. • Type - This identifies the item as a folder or file. • Name - This is the name of the folder/file. <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the Path field. All contents within the specified share are automatically selected.</p> <p>Click Apply to save your settings and Cancel to close the screen.</p>
Yes	Click this to move or copy the file/folder to the designated share.
Close	Click this to return to the Share Browser screen.

Maintenance Screens

15.1 Overview

This chapter discusses the **Maintenance** screens. The **Maintenance** screens allow you to manage system configurations.

15.2 What You Can Do

- Use the **Power** screen ([Section 15.3 on page 324](#)) to configure power settings for the NSA, including power saving, UPS, power on/off after power failure, power on/off schedule, and Wake on LAN.
- Use the **Log** screen ([Section 15.4 on page 328](#)) to check the system's logs.
- Use the **Configuration** screen ([Section 15.5 on page 332](#)) to backup or restore the NSA configuration file.
- Use the **SSL** screen ([Section 15.6 on page 333](#)) to configure HTTPS and the NSA's SSL certificate.
- Use the **Firmware Upgrade** screen ([Section 15.7 on page 336](#)) to upload new firmware.
- Use the **Shutdown** screen ([Section 15.8 on page 337](#)) to restart or shut down your NSA.

15.3 The Power Screen

Use this screen to manage power settings for the NSA.

Click **Maintenance** > **Power** to display the following screen.

Figure 177 Maintenance > Power

The screenshot shows the 'Maintenance - Power' configuration screen. It is divided into several sections:

- Power Management:** A text input field for 'Turn off hard disk(s)' is set to '3' minutes.
- Minimum UPS Capacity:** A text input field is set to '50' %.
- Note:** A yellow warning icon is followed by the text: 'Note: This feature will not work now because there is no UPS control cable connected. The NSA automatically shuts down if the UPS's remaining charge gets down to this level.'
- Power On After Power Failure:** Three radio button options:
 - Keep Former Status:** Selected. Description: 'If the system was on when the power failed, it restarts automatically when the power is restored. If it was off, it stays off.'
 - Always Power On:** Description: 'The system restarts automatically when the power is restored.'
 - Always Power Off:** Description: 'The system will not restart after power failure. You must press the power button manually to restart it.'
- Power On/Off Schedule:** An unchecked checkbox 'Enable Power Control Schedule' with an 'Edit' button next to it.
- Wake On LAN Setting:** A checked checkbox 'Enable Wake On LAN'.

At the bottom of the screen are 'Apply' and 'Reset' buttons.

The following table describes the labels in this screen.

Table 101 Maintenance > Power

LABEL	DESCRIPTION
Power Management	
Turn off hard disk(s)	Enter the number of minutes the NSA will sit idle before spinning the hard disks down to sleep. The default power-off time is 15 minutes.
Minimum UPS Capacity	

Table 101 Maintenance > Power (continued)

LABEL	DESCRIPTION
Minimum UPS Capacity	<p>When you use an APC Uninterruptible Power Supply (UPS) with a USB connection to the NSA, the NSA shuts itself down if the APC UPS's battery charge gets down to the percentage you specify in this field. This allows the NSA to shut down properly and avoid data loss caused by a power failure when the UPS stops supplying power.</p> <p>A setting around 50% is recommended. A setting close to 100% is not recommended since it would cause the NSA to shut down whenever the UPS is charging. A setting close to 0 is also not recommended since the UPS would not have enough power to allow the NSA to shutdown properly.</p>
Power On After Power Failure	Select an option to set whether or not the NSA restarts when the power is restored after a power failure.
Keep Former Status	Select this option to have the NSA automatically restart only if it was operating when the power failed. The NSA remains off if it was already off when the power failed.
Always Power On	Select this option to keep the NSA operating as much of the time as possible. The NSA restarts automatically even if it was turned off when the power failed.
Always Power Off	Select this option to keep the NSA from automatically restarting when the power is restored after a power failure. This is a computer's "traditional" behavior. Select this if you have other servers such as a domain controller or DNS server that you want to start or check after a power failure before the NSA turns on.
Power On/Off Schedule	
Enable Power Control Schedule	<p>Select this option to have the NSA turn itself off and on or reboot according to the schedules you configured.</p> <p>Click Edit to go to the screen where you can configure the power control schedules.</p> <p>Refer to Section 15.3.1 on page 326 for this screen.</p>
Enable Wake On LAN	<p>Enable Wake On LAN to be able to turn on the NSA through its wired Ethernet connection.</p> <p>You must have a computer or router on your LAN that supports sending Wake On LAN "magic packets" to turn on the NSA.</p> <p>To use Wake On LAN from a computer on your LAN, install a program such as Wake On LAN EX or another Wake On LAN program that supports sending magic packets.</p> <p>You can use Wake On LAN from a remote location if the router in front of the NSA supports sending magic packets.</p> <p>Use the NSA's power button or the Web Configurator's Maintenance > Shutdown menu to turn off the NSA.</p>
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

15.3.1 Editing the Power Control Schedule Screen

Click **Maintenance > Power Management > Edit** to open this screen. Use this screen to configure power control schedules to have the NSA turn on, turn off, or reboot at specified times.

Figure 178 Maintenance > Power Management > Edit

The screenshot shows the 'Power Control Schedule List' and the 'Add Power Control Schedule' form. The list contains two entries: 'Power On' with frequency 'Monthly : FirstMonday' and 'Power Off' with frequency 'Monthly : FourthFriday', both at '00:00'. The 'Add' form includes dropdowns for 'Type' (Power On), 'Frequency' (Monthly), and 'Execute Time (hh:mm)' (0:00). It also has radio buttons for 'Please select the day of the month' with options 'First' (selected) and 'Monday'.

Type	Frequency	Execute Time	Actions
Power On	Monthly : FirstMonday	00:00	
Power Off	Monthly : FourthFriday	00:00	

Note:
You must click on the apply button for your power control schedule settings to apply.

Add Power Control Schedule

Type: Power On
 Frequency: Monthly
 Execute Time (hh:mm): 0:00
 Please select the day of the month: First * Day Monday
 Add
 Apply Cancel

The following table describes the labels in this screen.

Table 102 Maintenance > Power Management > Edit

LABEL	DESCRIPTION
Power Control Schedule List	This table lists the power on, power off, and reboot schedules. For example, you could have one schedule to turn the NSA on every morning, at 8:00, another schedule to turn it off every evening at 18:00, and a third schedule to have it reboot every Friday at 14:00. Click a column's heading cell to sort the schedules by that column's criteria. Click the heading cell again to reverse the sort order.
Type	This field displays whether the power control schedule has the NSA turn on, turn off, or reboot.
Frequency	This field shows how often (monthly, weekly, or daily) the NSA is to apply this power control schedule.
Execute Time	This field shows when the NSA is to use this power control schedule (when the NSA is to turn on, turn off, or reboot).
Actions	Click the Delete icon to remove a power control schedule from the list.
Add Power Control Schedule	Use this part of the screen to configure power on, power off, and reboot times.

Table 102 Maintenance > Power Management > Edit (continued)

LABEL	DESCRIPTION
Type	Select whether this power control schedule has the NSA turn on, turn off, or reboot.
Frequency	Select whether the NSA is to apply this power control schedule entry on a monthly, weekly, or daily basis.
Execute Time (hh:mm)	<p>Enter the time, day, and/or day of the month as appropriate for this power control schedule entry. Leave more than 10 minutes between the execution times of the entries.</p> <p>If the NSA turns off or restarts while a user is transferring files to or from the NSA, the transfer fails. The user will need to restart the transfer.</p> <p>The NSA skips a scheduled restart or power off if the execution time comes while the NSA is doing any of the following:</p> <ul style="list-style-type: none"> • Resynchronizing a RAID • Upgrading firmware • Replacing the configuration file <p>If the NSA is turned off at the time when a restart or power off is scheduled, the NSA does not perform the restart or power off.</p> <p>If the NSA is turned on at the time when a power on is scheduled, the NSA does not perform the power on.</p>
Use this part of the screen to configure power on, power off, and reboot times.	
Please select the day of the month	<p>This is only available if you set the Frequency to Monthly.</p> <p>Choose the day of each month for the power control schedule entry.</p>
Every how many weeks?	<p>This is only available if you set the Frequency to Weekly.</p> <p>Enter the interval between weeks and choose the day of the week for the power control schedule entry.</p>
Every how many days?	<p>This is only available if you set the Frequency to Daily.</p> <p>Enter the interval between days for the power control schedule entry.</p>
Add	Click this to add the power control schedule to the list.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

15.4 The Log Screen

Click **Maintenance > Log** to open the following screen.

Use this screen to display all NSA logs. There are at most 512 entries in the log. Older logs are removed by the system. You cannot download the log file via FTP or CIFS.

Figure 179 Maintenance > Log

#	Time	Class	Severity	Message
1	2009-05-18 16:03:43	user	info	User admin has logged in from Web!
2	2009-05-18 16:02:14	user	info	User admin from Web has been logged out (lease timeout)!
3	2009-05-18 15:33:07	user	info	User admin has logged in from Web!
4	2009-05-18 15:30:09	user	info	User admin from Web has been logged out (lease timeout)!
5	2009-05-18 15:14:48	user	info	User admin has logged in from Web!
6	2009-05-18 15:00:31	user	info	User admin from Web has been logged out (lease timeout)!
7	2009-05-18 14:43:01	user	notice	Add new group crushes.
8	2009-05-18 14:41:24	user	info	User admin has logged in from Web!
9	2009-05-18 14:41:04	user	info	User admin from Web has been logged out (lease timeout)!
10	2009-05-18 14:36:32	built-in-service	info	Download service download http://www.garageband.com/mp3cat/.UZCMbCSD4a2n/01_April_17__2009__Friday__Part_3.mp3 error (0x20000012)
11	2009-05-18 14:36:31	built-in-service	info	Download service start to download http://www.garageband.com/mp3cat/.UZCMbCSD4a2n/01_April_17__2009__Friday__Part_3.mp3

The following table describes the labels in this screen.

Table 103 Maintenance > Log

LABEL	DESCRIPTION
Refresh	Click this to update the log display.
Purge all Logs	Click this to erase all logs from the NSA.
Report Config	Click this to open a screen where you can configure email alerts for logs. Refer to Section 15.4.1 on page 329 to see the screens for this.
Display	The screen always shows all logs by default. Choose a specific log category to view logs for just that category.
#	This is the log entry's number in the list according to the currently selected sort order.
Time	This shows the date and time the log was created. Click the top of the column to sort by oldest or newest.
Class	This displays the log category; see Table 112 on page 338 for details.
Severity	This displays how serious the log is rated by the NSA. See Table 113 on page 338 for more information.
Message	This displays a description of the log. Click the top of the column to sort by alphabetical or reverse alphabetical order.

15.4.1 Report Config Screen

In the **Log** screen, click **Report Config** to do the following:

- Use the **Email Setting** screen (Section 15.4.2 on page 329) to enable and configure e-mail alerts from the NSA.
- Use the **Report Setting** screen (Section 15.4.3 on page 330) to select the type of alerts you want to receive through e-mail and schedule when the NSA e-mails the alerts.
- Use the **Syslog Server Setting** screen (Section 15.4.4 on page 331) to enable the syslog server and select the categories to include in the log report.

15.4.2 Email Setting

You can enable and configure e-mail alerts from the NSA. In the **Report Config** screen, click the **Email Setting** tab to open the following screen.

Figure 180 Maintenance > Log > Report Config: Email Setting

The following table describes the labels in this screen.

Table 104 Maintenance > Log > Report Config: Email Setting

LABEL	DESCRIPTION
Enable Log Email	Click this to have the NSA e-mail log alerts to your e-mail account.
Email To	Enter the e-mail address where you want to receive the log alerts.
Email From	Enter the e-mail address the NSA uses in the From field of the e-mail header for its log alerts.
Email Server	Enter the e-mail server address the NSA uses to send e-mail alerts,
Email Format	Select the e-mail format you want the NSA to use in its e-mail alerts.
Use SMTP Authentication	Click this if the e-mail server you want the NSA to use for its e-mail alerts requires a username and password.
User	Enter the username for the e-mail server.

Table 104 Maintenance > Log > Report Config: Email Setting (continued)

LABEL	DESCRIPTION
Password	Enter the password for the e-mail server.
Password (Confirm)	Re-enter the password to confirm it.
After apply settings, send a test email	Click this to have the NSA send a test e-mail to the settings you have entered.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

15.4.3 Report Setting

You can select the type of alerts you want to receive through e-mail and schedule when the NSA e-mails the alerts. In the **Report Config** screen, click the **Report Setting** tab to open the following screen.

Figure 181 Maintenance > Log > Report Config: Report Setting

The screenshot shows the 'Log Report Configuration' window with the 'Report Setting' tab selected. It features two main sections: 'Email Alert' and 'Email Report'. Each section has a header row with tabs for 'All Logs', 'User', 'Shares', 'Services', 'System', 'Network', 'Storage', 'Applications', 'Backup', and 'Auto Upload'. Below these are rows of checkboxes for 'Alert' and 'Report'. The 'Email Report' section also includes a 'Report Time' configuration area with dropdowns for frequency (Weekly, Daily, Hourly), day of the week (Sunday), and time (hours and minutes). At the bottom of the window are 'Apply' and 'Cancel' buttons.

The following table describes the labels in this screen.

Table 105 Maintenance > Log > Report Config: Report Setting

LABEL	DESCRIPTION
Email Alert	Check the type of log alerts you want to receive in your e-mail. Select All Log to include all types of log alerts.
Email Report	Check the type of log alerts you want to receive in your e-mail. Select All Log to include all types of log alerts.
Report Time	Select how often (Weekly, Daily or Hourly), what day in the week (Monday to Sunday) and which time (hour:minutes) the NSA delivers its e-mail alerts.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

15.4.4 Syslog Server Setting

You can enable the syslog server and select the categories to include in the log report. In the **Report Config** screen, click the **Syslog Server Setting** tab to open the following screen.

Figure 182 Maintenance > Log > Report Config: Syslog Server Setting

The screenshot shows the 'Syslog Server Setting' configuration screen. It includes a section for enabling the syslog server and a table for selecting log categories. The table has columns for 'All Logs', 'User', 'Shares', 'Services', 'System', 'Network', 'Storage', 'Applications', 'Backup', and 'Auto Upload'. The 'Syslog' row has checkboxes for each category.

The following table describes the labels in this screen.

Table 106 Maintenance > Log > Report Config: Syslog Server Setting

LABEL	DESCRIPTION
Enable Syslog Server	Check this to enable syslog server.
Server Address	Enter the syslog server address you want the NSA to use for its log alerts.
In the table below, check the type of log alerts you want to receive in your e-mail. Select All Log to include all types of log alerts.	
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

15.5 The Configuration Screen

Click **Maintenance > Configuration** to open the following screen. Use this screen to backup or restore the NSA configuration settings.

Figure 183 Maintenance > Configuration

Maintenance - Configuration

Backup Current Configuration Settings

Click the "Backup" button to save the current configuration of our system to your local computer.

Backup

Restore Configuration

To restore a previously saved configuration file to your system, browse to the location of the configuration file and click Restore.

Restore File: Browse... Restore

Reset MySQL Database Password

Click the Reset MySQL Database Password button to reset the MySQL database password.

Reset MySQL Database Password

The following table describes the labels in this screen.

Table 107 Maintenance > Configuration

LABEL	DESCRIPTION
Backup Current Configuration Settings	
Backup	Click this 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	When you restore a file configuration, the NSA checks the volumes/share paths on the NSA and the configuration file. If the volume exists but the share path is missing in the NSA, the NSA automatically creates this share path. If the volume does not exist on the NSA, the Status of the share will show "missing share icon" in Shares screen (see Table 94 on page 312).
Browse	Click this to locate a previously-saved configuration file.
Restore	Click this 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.
Reset MySQL Database Password	Click this to reset the password for your MySQL database.

15.6 SSL Certification

Click **Maintenance > SSL** to open this screen, where you can turn on HTTPS, create a public key certificate, or upload a public key certificate that was issued by a known certificate authority.

Figure 184 Maintenance > SSL

Force HTTPS (TLS/SSL) Connections

⚠ Caution:
Modifications of TLS/SSL certificate settings will restart network services.

Force HTTPS

[Apply](#)

Install System Default CA

This action will install the system default CA in the trusted CA list of your browser

Step1 Download the default CA file [Download](#)

Step2 Double click on the CA file to install it into your browser

Modify the Existing Certificate

⚠ Caution:
Modifications of TLS/SSL certificate settings will restart network services.

Edit a self-signed CA certificate

Step1 Edit the Self-signed Certificate [Edit](#)

Step2 Download the self-signed CA file [Download](#)

Step3 Double click on the CA file to install it into your browser

Create a Certificate To Be Authorized By My Own Certificate Authority

The following table describes the labels in this screen.

Table 108 Maintenance > SSL

LABEL	DESCRIPTION												
Force HTTPS	<p>Select the Force HTTPS option to turn on the NSA's web browser security. Anyone who connects via HTTPS to the NSA must install the public key certificate associated with it.</p> <p>Note: The NSA will restart the web configurator after you click Apply.</p> <p>The NSA displays a warning screen if applying your change may disconnect some users. Click Apply if you want to continue.</p> <div data-bbox="646 625 1409 1014" style="border: 1px solid black; padding: 5px;"> <p>Warning Confirmation</p> <p>The following users are currently connected. If you decide to continue, they may be disconnected.</p> <table border="1" data-bbox="662 716 1393 814"> <thead> <tr> <th>Type</th> <th>Share Name</th> <th>Username</th> <th>IP Address</th> </tr> </thead> <tbody> <tr> <td>Web</td> <td></td> <td>admin</td> <td>172.23.37.104</td> </tr> <tr> <td>CIFS</td> <td>music</td> <td>admin</td> <td>172.23.37.104</td> </tr> </tbody> </table> <p>⚠ Performing this operation will cause some network services to temporarily disconnect.</p> <p style="text-align: right;"> <input type="button" value="Apply"/> <input type="button" value="Cancel"/> </p> </div>	Type	Share Name	Username	IP Address	Web		admin	172.23.37.104	CIFS	music	admin	172.23.37.104
Type	Share Name	Username	IP Address										
Web		admin	172.23.37.104										
CIFS	music	admin	172.23.37.104										
Install System Default CA	<p>Click Download button to save a copy of the NSA's public key certificate to your local computer. This is useful for installing the certificate without having to connect to the NSA, or for sending by email to other users for them to install prior to logging into the NSA for the first time. After saving the certificate to your computer, double-click it to install it.</p> <p>Note: Each web browser handles certificate installation differently. See Appendix D on page 411 for more information.</p>												
Modify the Existing Certificate	<p>Select Edit a self-signed CA certificate, then follow the on-screen instructions for creating a public key certificate signed by the NSA as the local certificate authority.</p> <p>Note: Use certificates created and signed by the NSA if the device is not open to external access.</p> <p>Select Create a certificate authorized by other CA, then follow the on-screen instructions to install a certificate that has been authorized by a third-party certificate authority.</p> <p>Note: Use this method if the device is open to external access, such as allowing users to connect through the Internet using FTP over TLS or HTTPS.</p>												

15.6.1 Modifying or Creating a Certificate

When you select the **Edit a self-signed CA certificate** option, then click the **Edit** button, a screen opens to allow you to make adjustments to the NSA's public key certificate.

The screen is also the same for the **Create a certificate authorized by other CA** option.

Figure 185 Maintenance > SSL > Create or Edit a Certificate

Create a Certificate Signing Request

Common Name

Host IP Address

Host Domain Name

Organizational Unit(Optional) Max length: 64 characters

Organization(Optional) Max length: 64 characters

Country(Optional) Country code only, such as TW, US, JP, etc,...

Key Type

Key Length

Note:
If you choose a large key length, it may take a while to make the certificate file.

The following table describes the labels in this screen.

Table 109 Maintenance > SSL > Create or Edit a Certificate

LABEL	DESCRIPTION
Common Name	This name describes the certificate's origin, either in the form of an IP address or a domain name.
Host IP Address	Select this option and enter the NSA's IP address if you want to use this for the common name.
Host Domain Name	Select this option and enter the NSA's domain name if you want to use this for the common name
Organizational Unit (Optional)	Enter this name of the organizational unit which owns or maintains the NSA. This is an optional field.
Organization (Optional)	Enter this name of the organization or company which owns or maintains the NSA. This is an optional field.
Country (Optional)	Enter this name of the country in which the NSA is located. This is an optional field.
Key Type	Select the certificate's key type, either RSA or DSA . RSA is a public-key encryption and digital signature algorithm, while DSA is only a digital signature algorithm.
Key Length	Select the encryption key length. The longer the key, the better the encryption security. The only drawback to having a long key is that the file encrypted with it swells in size as well.

Table 109 Maintenance > SSL > Create or Edit a Certificate

LABEL	DESCRIPTION
Apply	Click this to save your changes.
Cancel	Click this to discard changes and close the window.

15.7 The Firmware Upgrade Screen

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

Do not turn off the NSA while it is upgrading the firmware or you may render it unusable.

Click **Maintenance > FW Upgrade** to open the following screen.

Figure 186 Maintenance > FW Upgrade

The following table describes the labels in this screen.

Table 110 Maintenance > FW Upgrade

LABEL	DESCRIPTION
Firmware File	Type the location of the firmware file you want to upload
Browse	Click this to find the file on your computer
Upload	Click this 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.
Reset	Click this to refresh the screen.

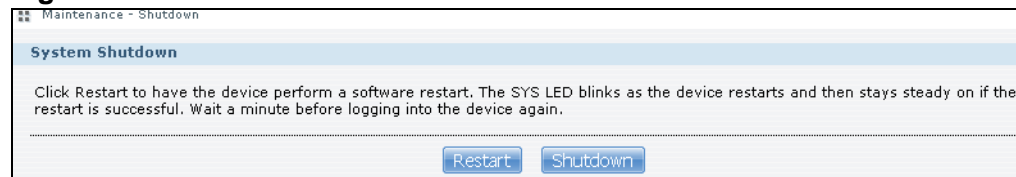
Table 110 Maintenance > FW Upgrade (continued)

LABEL	DESCRIPTION
Periodically Check for Latest Firmware Automatically	Select this to have the NSA regularly check ZyXEL's server for updated firmware. The NSA notifies you at login if a new firmware is available. Click Apply to save this field's setting.
Check for Latest Firmware Now	Click this to check ZyXEL's server for updated firmware.

15.8 The Shutdown Screen

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.

Click **Maintenance > Shutdown** to open the following screen.

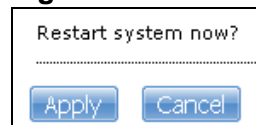
Figure 187 Maintenance > Shutdown

The following table describes the labels in this screen.

Table 111 Maintenance > Shutdown

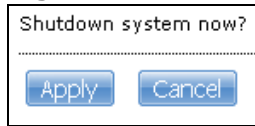
LABEL	DESCRIPTION
Restart	Click this to have the device perform a software restart.
Shutdown	Click this to shut down the system and restart it again later.

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 188 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 189 Maintenance > Shutdown > Confirm Shutdown



15.9 Technical Reference

This section provides technical background information on the topics discussed in this chapter.

15.9.1 Log Classes

The following table shows information on log classes.

Table 112 Log Classes

LOG CATEGORY	DESCRIPTION
Users	This log class shows information on user access to the NSA.
Shares	This log class shows information on shares being created or deleted.
Services	This log class shows information on the operation of the NSA's built-in services.
System	This log class shows all other system related messages.
Network	This log class shows information on network configuration, setting changes and so on.
Storage	This log class shows information on the NSA's internal and external storage activities.
Backup	This log class shows information on all backup-related activities.
Auto Upload	This log class shows information on automatic uploads done by the NSA.

15.9.2 Log Severity Levels

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 113 Log Severity Levels

LEVEL	DESCRIPTION
0	Emergency
1	Alert

Table 113 Log Severity Levels (continued)

LEVEL	DESCRIPTION
2	Critical
3	Error
4	Warning
5	Notice
6	Info

15.9.3 Log Messages

Here are some example log messages.

Table 114 Log Messages

CLASS	SEVERITY	MESSAGE
Auto upload	INFO	%s is queued.
Auto upload	INFO	%s uploaded (Flickr or YouTube Upload).
Auto upload	WARNING	error uploading "%s" (%s): %s
Auto upload	INFO	%s will not be uploaded to %s for there is already a duplicate file.
Auto upload	INFO	Failed to upload %s to %s (FTP Upload) : %s
Auto upload	INFO	Successfully upload %s to %s (FTP Upload)
Copy/Sync Button	ERROR	[USB %s] Backup Folder Does Not Exist.
Copy/Sync Button	ERROR	[USB %s] Target Folder Does Not Exist.
Copy/Sync Button	ERROR	[USB Sync] Failed at %s: It is a Folder in Internal Volume. But It is not a Folder in USB.
Copy/Sync Button	ERROR	[USB Sync] Failed at %s: It is a Folder in USB. But It is not a Folder in Internal Volume.
Copy/Sync Button	ERROR	[USB Sync] Failed at File %s.
Copy/Sync Button	ERROR	[USB Sync] Sync Failed at Folder %s.
Copy/Sync Button	ERROR	Modify COPY/SYNC Button Configuration: %s
Copy/Sync Button	ERROR	Please Change Your Folder Name. Invalid Path: %s
Copy/Sync Button	INFO	[USB Sync] Copying %s from Internal Volume to Backup Folder.
Copy/Sync Button	INFO	[USB Sync] Copying %s from Internal Volume to USB.
Copy/Sync Button	INFO	[USB Sync] Copying %s from USB to Backup Folder.
Copy/Sync Button	INFO	[USB Sync] Copying %s from USB to Internal Volume.

Table 114 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Copy/Sync Button	INFO	[USB Sync] Deleting %s from Internal Volume.
Copy/Sync Button	INFO	[USB Sync] Deleting %s from USB.
Copy/Sync Button	INFO	[USB Sync] Deleting %s from USB Recursively.
Copy/Sync Button	INFO	[USB Sync] Finished. Elapsed Time %s Seconds.
Copy/Sync Button	INFO	[USB Sync] Moving %s from Internal Volume to Backup Folder.
Copy/Sync Button	INFO	[USB Sync] Moving %s from USB to Backup Folder
Copy/Sync Button	INFO	[USB Sync] Skip %s: File not Exist
Copy/Sync Button	INFO	[USB Sync] Skip %s: Not a Regular File.
Copy/Sync Button	INFO	[USB Sync] Start Pre-Processing: Generating File Lists.
Copy/Sync Button	NOTICE	[USB Sync] Start Copying Files.
Download Service	ERROR	Download service cannot find a volume
Download Service	ERROR	Download service failed to find ipfilter.dat
Download Service	INFO	Download service add a URL download job %s
Download Service	INFO	Download service delete %s by user
Download Service	INFO	Download service download %s error (0x%08x)
Download Service	INFO	Download service download %s finished in %s
Download Service	INFO	Download service found a new torrent file %s
Download Service	INFO	Download service initialized
Download Service	INFO	Download service pause %s by user
Download Service	INFO	Download service set %s to %s priority by user
Download Service	INFO	Download service set default download location to %s
Download Service	INFO	Download service set max BT download rate to %d KB/s by user

Table 114 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Download Service	INFO	Download service set max BT upload rate to %d KB/s by user
Download Service	INFO	Download service set max download slot to %d
Download Service	INFO	Download service set seeding time to %d minutes
Download Service	INFO	Download service set TCP port to %d and UDP port to %d
Download Service	INFO	Download service set torrent monitor location to %s
Download Service	INFO	Download service start to download %s
Download Service	INFO	Download service stopped
Download Service	INFO	Download service suspend %s because of no data income detected or to limit max download slot
Download Service	INFO	Download service add comment %s to %s by user
Download Service	INFO	Download service set min upload/download ratio to %d%
Download Service	INFO	Download service set max seed slot to %d
Download Service	INFO	Download service start loading ipfilter.dat
Download Service	INFO	Download service clear all ipfilter rules
Download Service	INFO	Download service blocked peer removed from peer list
Download Service	INFO	Download service disconnected blocked peer
Download Service	INFO	Download service incoming connection blocked by IP filter
Download Service	INFO	Download service peer from tracker blocked by IP filter
Download Service	INFO	Download service abort loading ipfilter.dat
Download Service	INFO	Download service will update ipfilter.dat from %s after %d day(s)
Download Service	INFO	Download service added %d rules from ipfilter.dat
Download Service	INFO	Download service detected invalid ip range %s in ipfilter.dat
Download Service	WARNING	Download service default location does not exist. Load default

Table 114 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Download Service	WARNING	Download service default torrent location does not exist. Load default
Groups	NOTICE	Add new group %s.
Groups	NOTICE	Delete group %s.
Network	NOTICE	%s is active because of changing Port Group. Enable DHCP client.
Network	NOTICE	%s is inactive because of changing Port Group. Disable DHCP client.
Network	NOTICE	%s MTU > (%s MTU - 8), %s may not work correctly.
Network	NOTICE	(%s MTU - 8) < %s MTU, %s may not work correctly.
Network	NOTICE	Add interface %s.
Network	NOTICE	Because %s link down. Default route will not apply until %s link up.
Network	NOTICE	Because base interface %s will be disabled. Interface %s is disabled now., base_ud_iface
Network	NOTICE	Network Config setting is changed
Network	NOTICE	Interface %s was disabled.
Network	NOTICE	Interface %s was enabled.
Network	NOTICE	Port Group on %s is changed. Renew DHCP client.
Network	NOTICE	Account pppoe was changed
Network	NOTICE	Add account pppoe
Network	NOTICE	ADD interface ppp0
Network	NOTICE	Interface ppp0 will reapply because Device-Ha become active status.
Network	NOTICE	Interface ppp0 will reapply because Device-Ha is not running.
Network	NOTICE	Network port is disabled
Network	NOTICE	Network port is enabled
Services	INFO	HTTP management port has changed to %s
Services	INFO	Clock timezone is set to GMT%s
Services	INFO	Clock timezone is set to default
Services	INFO	Clock daylight saving is enabled
Services	INFO	Clock daylight saving is disabled
Services	INFO	Clock has disable daylight saving
Services	INFO	MyClock has enable daylight saving
Services	INFO	MyClock has set timezone to %s
Services	INFO	MyClock has set timezone to default
Services	INFO	The date and time are updated from NTP server.
Services	INFO	The date and time are updated manually.
Services	INFO	The time is updated manually.

Table 114 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Services	NOTICE	FTP server stops
Services	NOTICE	FTP server starts
Services	NOTICE	MyClock has changed daylight saving interval
Services	NOTICE	MyClock has disabled daylight saving interval
Services	NOTICE	NTP server has set to '%s'
Services	NOTICE	NTP server has set to null
Services	NOTICE	The NTP service is disabled.
Services	NOTICE	The NTP service is enabled.
Services	WARNING	Reaching Maximum Allowed Rules
Services	WARNING	Rule is empty
Services	WARNING	The Rule Does Not Exist
Shares	INFO	Expire recycle-bin finish for share %s, process time: %s seconds, remove %s file (%s bytes)
Shares	NOTICE	Add new disabled share %s for unshared folder: %s in volume: %s.
Shares	NOTICE	Add new share %s.
Shares	NOTICE	Delete share %s.
Shares	NOTICE	Purge all files in recycle-bin folder in share: %s.
Shares	NOTICE	Recycle-bin disabled. Remove recycle-bin folder in share: %s.
Storage	ERROR	Eject External Disk (%s): FAILED
Storage	INFO	Eject External Disk (%s): SUCCESS
Storage	ERROR	Relabel Raid to [%s]: FAILED
Storage	ERROR	Start Repairing Degraded Raid by disk%s: FAILED
Storage	INFO	Relabel Raid to [%s]: SUCCESS
Storage	INFO	Start Repairing Degraded Raid by disk%s: SUCCESS
Storage	NOTICE	Auto Repair Degraded RAID by disk%s.
Storage	NOTICE	There is a RAID Degraded.
Storage	ERROR	Cancel External Volume Scan: FAILED
Storage	ERROR	Cancel Internal Volume Scan: FAILED
Storage	ERROR	Cannot Unmount Volume and RAID. System Busy Using Volume and RAID: Please Reboot and Try Again
Storage	ERROR	Create External Normal Volume [%s] (%s): FAILED
Storage	ERROR	Create Internal Volume [%s] (%s): FAILED
Storage	ERROR	Rename External Volume to [%s]: FAILED
Storage	ERROR	Scan External Volume: FAILED
Storage	ERROR	Scan Internal Volume (%s operation): FAILED
Storage	INFO	Cancel External Volume Scan: SUCCESS
Storage	INFO	Cancel Internal Volume Scan: SUCCESS

Table 114 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Storage	INFO	Create External Normal Volume [%s] (%s): SUCCESS
Storage	INFO	Create Internal Volume [%s] (%s): SUCCESS
Storage	INFO	Rename External Volume to [%s]: SUCCESS
Storage	INFO	Scan External Volume: SUCCESS
Storage	INFO	Scan Internal Volume (%s operation): SUCCESS
System	INFO	NTP update failed
System	INFO	NTP updates successfully from %s
System	INFO	NTP fails to update from %s
System	INFO	Device is rebooted by administrator!
System	INFO	Device is shutdown by administrator!
System	NOTICE	DNS server is changed.
System	NOTICE	Hostname is cleared.
System	NOTICE	Hostname is set to '%s'.
System	NOTICE	System description is changed.
System	NOTICE	System description is empty now.
System	NOTICE	DNS server setting is changed
System	NOTICE	DNS server address is changed to be given from DHCP server
System	NOTICE	DNS server address is changed to be assigned by user
System	NOTICE	Name server is changed.
USB	NOTICE	An external APC UPS device is plugged/unplugged.
USB	NOTICE	An external Mass Storage device is plugged/unplugged.
USB	NOTICE	An external Printer device is plugged/unplugged.
USB	NOTICE	An external USB hub device is plugged/unplugged.
Users	ALERT	Failed %s login attempt (incorrect password or inexistent username)
Users	ALERT	Failed %s login attempt (incorrect password or inexistent username)
Users	INFO	User %s has logged in from %s!
Users	INFO	User %s has logged out from %s!
Users	INFO	User %s from %s has been logged out (re-auth timeout)!
Users	INFO	User %s from %s has been logged out (lease timeout)!
Users	NOTICE	Add new user %s by %s from %s.
Users	NOTICE	User %s password has been changed.
Users	NOTICE	Delete user %s by %s from %s.
Users	NOTICE	The user %s from %s has attempted to change the user %s password but old password verification fail.
Users	NOTICE	User %s on %u.%u.%u.%u has been denied access from %s
Users	NOTICE	User %s password has been changed by %s from %s.

Table 114 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Backup/ Restore	ERROR	When query remote target [%s]: %s
Backup/ Restore	INFO	Backup job [%s] successfully
Backup/ Restore	ERROR	When backup [%s]: %s
Backup/ Restore	ERROR	When backup [%s], error happens: %s
Backup/ Restore	INFO	Start to restore backup job [%s].
Backup/ Restore	INFO	Restore backup job [%s] successfully.
Backup/ Restore	ERROR	Restore backup job [%s] failed: %s
Backup/ Restore	INFO	Start to restore backup job [%s] from [%s].
Backup/ Restore	INFO	Restore from [%s] successfully.
Backup/ Restore	ERROR	Restore from [%s] failed: %s
Backup/ Restore	ERROR	When restore [%s]: %s
Backup/ Restore	ERROR	When restore job [%s], error happens: %s
Power Management	INFO	Job [%s] is triggered by schedule
Power Management	INFO	Job [%s] is triggered by user
Power Management	ERROR	Job [%s] is resulted as failed
Power Management	INFO	Job [%s] is finished successfully
Power Management	INFO	Job [%s] is pending because other job is running
Power Management	INFO	Job [%s] is canceled by user
Power Management	INFO	Restore job [%s] is triggered by user
Power Management	INFO	[Power On] schedule is triggered.
Power Management	INFO	[Power Off] schedule is triggered.
Power Management	INFO	[Reboot] schedule is triggered.

Protecting Your Data

16.1 Overview

This chapter compares the different ways of protecting data on the NSA and explains how to use backup management software included on the CD.

16.2 Protection Methods

There are a variety of ways to protect your data on the NSA. Below is a summary table of what can be done in each situation.

Table 115 Overview of Protection Methods

SITUATION	ACTION
Unexpected NSA behavior after configuration changes	Back up the NSA configuration file before you make major configuration changes.
Need to transfer data from your computer to the NSA after volume(s) have been created	Use the Memeo Autobackup program.
Data infected by virus	Use anti-virus software on your computer to scan files before saving them onto the NSA. Although this may be slow so you may want to schedule it to occur while no one is using the NSA. Use a firewall with anti-virus capability on your network.
Hard drive malfunction.	Use RAID.
NSA malfunction Network down Natural disaster such as a fire or earthquake occurs where your NSA is located	Back up data to another NSA or external USB hard drive.

The following sections describe these methods in more detail. See [Section 7.6.3 on page 169](#) for more information on RAID.

16.3 Configuration File Backup and Restoration

Use the **Maintenance > Configuration** menus to create a file of your NSA configurations such as passwords, shares and volumes created, network settings and so on. If you're going to do some major configuration changes, then it is advisable to create a configuration backup file. If things go wrong after you make the configuration changes, you can always go back to the previous configuration by restoring an earlier configuration file.

If you forgot the NSA password, then use the **RESET** button (see [Section 1.3.2 on page 27](#)) to return the NSA to the factory default configuration.

Note: Configuration File Backup and Restoration does not affect data (your files and folders), volumes on the NSA.

16.4 Memeo Autobackup

Use the Memeo Autobackup software (included on the CD) on your computer to schedule and manage backups. You can backup from your computer to the NSA. You can also backup from one NSA on your network to another. You can set the Memeo Autobackup software to automatically back up files from your computer to the NSA whenever you modify the files.

Install the included DLNA-compliant Memeo Autobackup software on your Windows XP or later computers to let them browse and play files stored on the NSA.

Note: The Memeo Autobackup program uses the same network port as the NAS Starter Utility to discover the NSA. To avoid a port conflict, do not run the Memeo Autobackup program at the same time as the NAS Starter Utility.

Use the Memeo Autobackup software included on the CD to automatically back up selected files from your computer to the NSA whenever you modify the files.

Memeo Autobackup works with Windows XP, Windows Vista, and both the 32 bit and 64 bit versions of Windows 7.

16.4.1 Memeo Autobackup Installation and Setup

Note: The Memeo Autobackup program uses the same network port as the discovery utility to discover the NSA. To avoid a port conflict, turn off the discovery utility before using Memeo Autobackup.

- 1 Since a computer restart is required, close your other files and programs before installing the Memeo Autobackup software.
- 2 Insert the included CD into your CD-ROM drive. Click the **Tools** icon in the screen that displays. Then click **Memeo Instant Backup Software**.

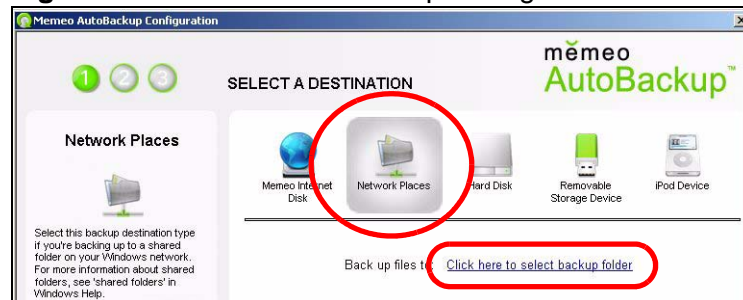
Note: If this screen does not display, use Windows Explorer (My Computer) to go to the CD-ROM (commonly drive D). Double-click **setup.exe**.

- 3 Follow the instructions to install the software.

Note: Memeo Autobackup requires Microsoft.NET version 2.0. The wizard installs it for you if it is not already on your computer.

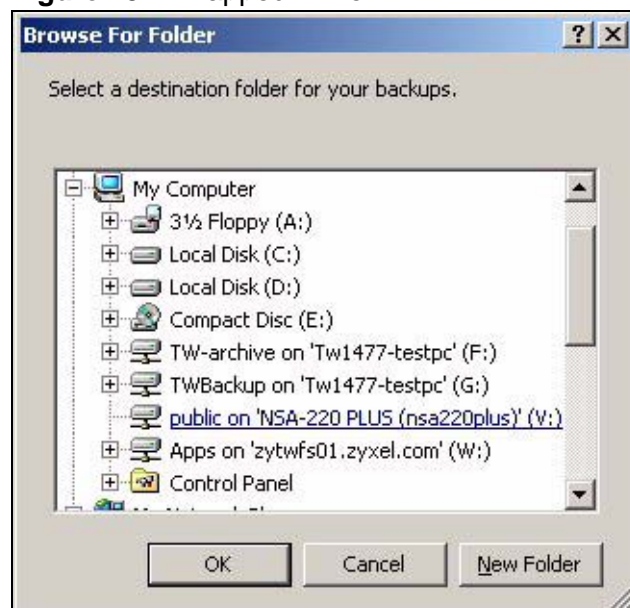
- 4 When you see the following screen, select **Network Places** and click the link to select your backup folder.

Figure 190 Memeo Autobackup Configuration



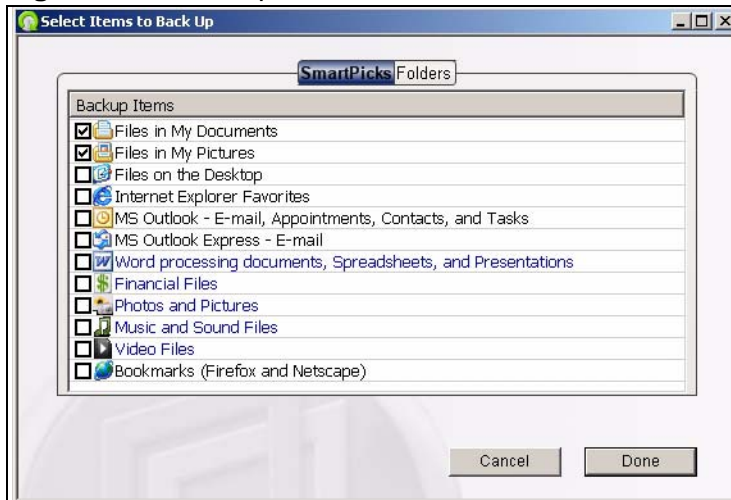
- 5 Select the NSA's mapped drive and click **OK**.

Figure 191 Mapped Drive



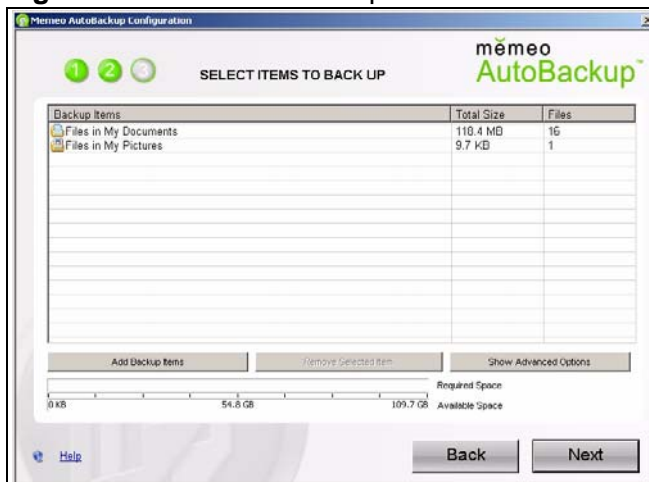
- In this screen, select the items that you want to back up.

Figure 192 Backup Items



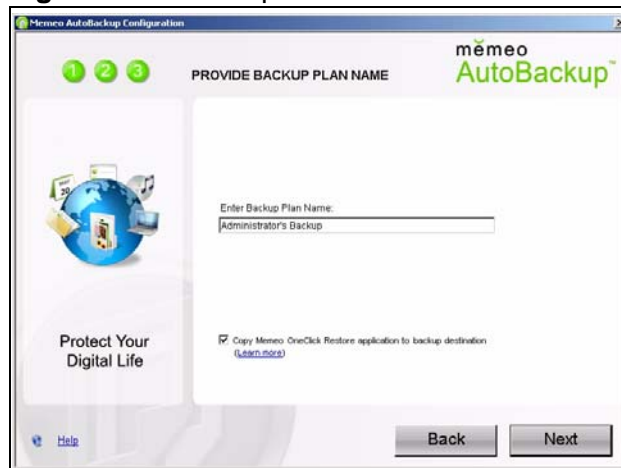
- This screen lists the items you selected for backup. Confirm your selections and click **Next**.

Figure 193 Confirm Backup Items




- 8 Specify a name for your backup plan (or just use the default). Click **Next** and then **Done**.

Figure 194 Backup Plan Name

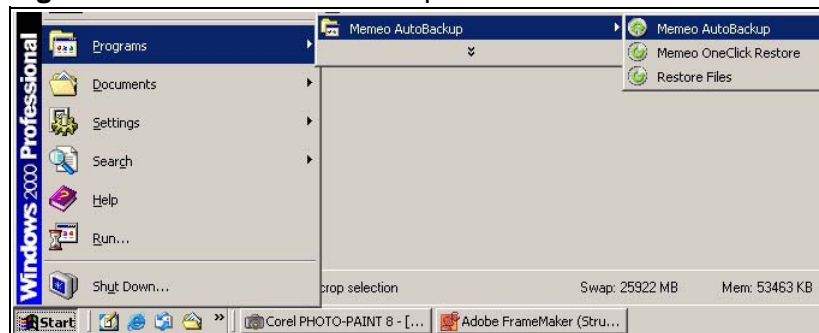


16.4.2 Using Memeo Autobackup After the Initial Setup

After you have installed and configured Memeo Autobackup, double-click the  icon in the system tray to open the program's start screen.

If the icon is not displayed, you can click **Start > Programs > Memeo Autobackup > Memeo Autobackup** to start it.

Figure 195 Memeo Autobackup



Troubleshooting

17.1 Troubleshooting Overview

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

- [Power, Hardware, Connections, and LEDs](#)
- [NAS Starter Utility](#)
- [NSA Login and Access](#)
- [I Cannot Access The NSA](#)
- [Users Cannot Access the NSA](#)
- [External USB Drives](#)
- [Firmware](#)
- [File Transfer](#)
- [Networking](#)
- [Some Features' Screens Do Not Display](#)
- [Media Server Functions](#)
- [Download Service and Broadcatching Functions](#)
- [Web Publishing](#)
- [Auto Upload](#)
- [Package Management](#)
- [Backups](#)

17.2 Power, Hardware, Connections, and LEDs

The NSA **PWR** LED does not turn on (no LEDs are on).

- Make sure the NSA is turned on.

- Make sure you are using the power adaptor or cord included with the NSA.
- Make sure the power adaptor or cord is connected to the NSA and plugged in to an appropriate power source. Make sure the power source is turned on.
- Turn the NSA off and on.
- If the problem continues, contact the vendor.

An HDD LED is off.

The **HDD** LED is off when the NSA cannot detect a hard drive in the drive bay. Replace or install a hard drive. See [Installing or replacing a hard disk](#).

An HDD LED is red.

Red means that the NSA detected an error on the hard drive (like a bad sector for example). The NSA automatically tries to recover a bad sector, but the LED stays red until the NSA restarts. Even if the hard drive still functions, it is recommended that you replace it since errors are a sign that the hard drive may fail soon. See [Installing or replacing a hard disk](#).

Installing or replacing a hard disk.

Do not remove or install a hard disk while the NSA is turned on. The NSA must be turned off before you remove or install the hard disk.

- 1 Turn the NSA off, remove the front panel and make sure:
 - there is a SATA I or SATA II (3.0 Gbit/s) compatible hard disk installed.
 - the hard disk is installed correctly in the disk bay. Push the disk back into the NSA disk bay until the hard disk is fitted snugly inside the NSA (see the NSA Quick Start Guide and [Section 7.2.1 on page 160](#)).
 - the hard disk could be faulty. Try a different hard drive or test the original hard disk in a different NSA or computer.
- 2 If you had to replace the drive, turn on the NSA and go to the **Storage** screen.
 - If you have a RAID 1 volume click the **Repair** icon next to the new drive.
 - If you are using RAID 0 you will need to recreate the whole volume. All of your data is lost.

- If you are using a single-disk JBOD volume, you need to create a new volume on the new drive.
- If you are using a two-disk JBOD volume, you need to create a whole new volume on both drives.

The LAN LED (by the LAN port) is off.

- Make sure the Ethernet cable is connected properly to the NSA and connected to another (Ethernet) device. Make sure the other device is turned on. If it's connected directly to a computer, make sure that the computer network card is working (ping 127.0.0.1 on the computer).
- Use another Ethernet cable. If you're connecting to a Gigabit Ethernet, make sure you're using an 8-wire Ethernet cable.
- If the problem continues, contact the vendor.

See [Section 1.3 on page 25](#) for a description of NSA LEDs.

The NSA turns off or reboots by itself.

Check the **Power Management** screen. This is where you configure power settings for the NSA, including power saving, UPS, power on/off during power failure and power on/off schedule. The NSA may be set to turn off under certain conditions.

A power failure occurred while the NSA is downloading files.

- If power failure occurs during the active download period, the NSA will verify whether the downloaded files were damaged.
- If a file is corrupted, the NSA will download the file again.
- If the file is intact but not completely downloaded, the NSA will resume the download task after it restarts.

17.3 NAS Starter Utility

The NAS Starter Utility cannot discover my NSA.

- Close the NAS Starter Utility and reopen it.
- Check your hardware connections and make sure they are set up correctly.
- Only one instance of the NAS Starter Utility can run on your computer. Make sure you close any duplicate windows for this application.
- Wait for the **SYS** LED to stop blinking before clicking **Discover**.
- Confirm that the computer running the NAS Starter Utility has a network connection. See the section on the NSA's LAN connection for related information.
- The computer running the NAS Starter Utility can only discover NSAs in the same subnet. NSAs connected to the same switch or router as your NAS Starter Utility computer are usually in the same subnet unless the router is doing subnetting or the switch is implementing VLAN.
- The Memeo Autobackup program uses the same network port as the NAS Starter Utility to discover the NSA. To avoid a port conflict, do not run the Memeo Autobackup program at the same time as the NAS Starter Utility.

The NAS Starter Utility discovered my NSA but the status is always unreachable, even though I can access it.

You may need to add the NAS Starter Utility to your software firewall's allow list or lower your software firewall or anti-virus scanner's security level. Alternatively you may have to configure your software firewall or other security software to allow UDP port 50127 traffic from the NSA. If there is a hardware firewall between you and the NSA, configure it to allow UDP port 50127 traffic from the NSA.

I was able to access the NSA on a previous attempt but I cannot access the NSA anymore.

If you enable jumbo frames on the NSA in a network that does not support them, you will lose access to the NSA. If this occurs, you will have to restore the factory default configuration. The reset process does NOT affect the volume settings, nor data stored on the NSA. Press the **RESET** button until you hear two beeps. After the second beep, continue pressing the button for five more seconds, then release it. You will hear three quick beeps after you release the button.

I have at least two NSAs in my network, how do I identify which one I want to configure in the NAS Starter Utility screens.

If you have several NSAs connected to your computer/network, give each a unique name. You may have to disconnect all but one and use the NAS Starter Utility to rename it. Then connect another NSA and rename it and continue to connect and rename the NSAs one-by-one until they are all connected and each has a unique name.

Alternatively, if you have a DHCP server on your network and you can access it's list of assigned IP addresses, you could see which IP address belongs to which NSA. You can check the MAC address of your NSA by checking the attached sticker in the device housing.

17.4 NSA Login and Access

I forgot the server name of the NSA.

- The default server name is **nsa320**.
- Use the NAS Starter Utility to discover your NSA. If you have admin privileges, you can directly change the IP address of the NSA using the NAS Starter Utility.
- If the server name has changed and you don't have the NAS Starter Utility, see [Section 1.3.2 on page 27](#) to use the **RESET** button to return to the default setting.

I cannot get to the NSA login screen.

- Use the NAS Starter Utility to discover your NSA. If you have admin privileges, you can directly change the IP address of the NSA using the NAS Starter Utility.
- Make sure you have used the NAS Starter Utility to initialize your NSA.
- If you used the **RESET** button, the NSA may have a new IP address. Close and reopen the NAS Starter Utility to discover the NSA.
- Make sure the NSA is turned on.
- If you are trying to login directly by typing the server name into your web browser's address field, make sure you are using the correct server name as the web site address.

- The default server name is **nsa320**, if you have changed the server name, use the new one.
- If the server name has been changed and you do not know the new server name, see the troubleshooting suggestions for [I forgot the server name of the NSA](#).
- If it still doesn't work, try using the NAS Starter Utility.
- Check the hardware connections, and make sure the LEDs are behaving as expected. See the Quick Start Guide and [Section 1.3 on page 25](#).
- By default, the NSA gets an IP address automatically. The NSA assigns itself an IP address if no device assigns one. If your computer is also set to get an IP address automatically, the computer and the NSA can both assign themselves IP addresses and communicate. See [Section 8.4 on page 175](#) if you need to configure the NSA with a static IP address.
- If you are connecting to the NSA by its IP address, make sure you use the correct one. If the NSA has a wired Ethernet connection and a wireless connection through an attached USB wireless dongle, the NSA has a different IP address for each connection. To connect through the wired Ethernet connection, use the wired Ethernet connection's IP address. To connect through the wireless connection, use the wireless connection's IP address.
- Make sure your computer's IP address is in the same subnet as the NSA's IP address. You can use the NAS Starter Utility to find the NSA's IP address. See [Appendix A on page 383](#) for how to change your computer's IP address. Skip this if you know that there are routers between your computer and the NSA.
- Ping the NSA from your computer. Make sure your computer's Ethernet adapter is installed and functioning properly. In a (Windows) computer, click **Start**, **(All) Programs, Accessories** and then **Command Prompt**. In the **Command Prompt** window, type "ping" followed by the NSA's IP address (use the NAS Starter Utility to find the NSA's IP address if you don't know it) and then press [ENTER].
- Make sure you are using Internet Explorer 6.0 (and later) or Firefox 1.07 (and later).
- Make sure your Internet browser does not block pop-up windows and has JavaScript and Java enabled. See [Appendix B on page 397](#). With Internet Explorer 6, you may also have to enable scripting of safe ActiveX controls. See [Section 17.4.1 on page 359](#).

[I forgot the password.](#)

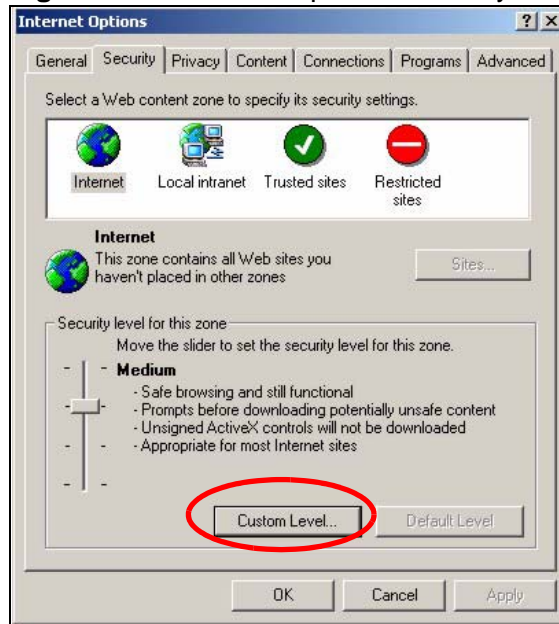
- The default password is **1234**.
- If you have changed the password and forgotten it, you will have to reset the NSA.

17.4.1 Enabling Scripting of Safe ActiveX Controls

If pages of the web configurator do not display properly in Internet Explorer, check that scripting of safe ActiveX controls is enabled.

- 1 In Internet Explorer, click **Tools**, **Internet Options** and then the **Security** tab.

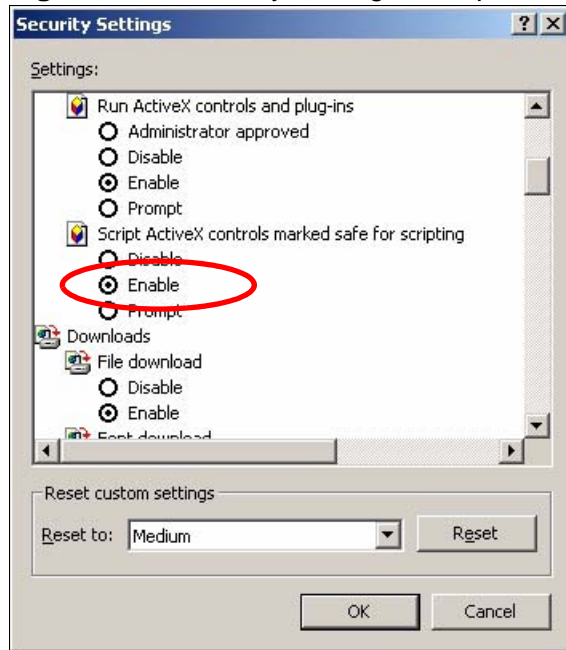
Figure 196 Internet Options: Security



- 2 Click the **Custom Level...** button.
- 3 Under **Script ActiveX controls marked safe for scripting**, make sure that **Enable** is selected (the default).

- 4 Click **OK** to close the window.

Figure 197 Security Settings - Script Safe ActiveX Controls



I can see the login screen, but I cannot log in to the NSA.

- Make sure you have entered the username and password correctly. The default username is **admin**, and the default password is **1234**. These fields are case-sensitive, so make sure [Caps Lock] is not on.
- Turn the NSA off and on.
- If this does not work, see [Section 1.3.2 on page 27](#) to reset the device.

I cannot see the multi-language web configurator screens while using Internet Explorer.

Use [Section 17.4.1 on page 359](#) to enable the scripting of safe ActiveX controls.

The Web Configurator logs out by itself.

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.

17.5 I Cannot Access The NSA

I cannot access a share.

- Check that the NSA is turned on and connected to the network. Try to ping the NSA or use the NAS Starter Utility to discover it.
- Make sure you have used the NAS Starter Utility to initialize your NSA. See [Chapter 2 on page 29](#) for more information.
- Check that you entered your login name and password correctly.
- Check that the share exists and check its access settings.
- Check if the shared folder is a subfolder of another (parent) share. Check that the parent share's access rights do not conflict with the subfolder share. It is recommended that you do not create subfolder shares.
- Check if there are any existing mapped network drives to the NSA. You may need to disconnect existing mapped network drives as a new mapped network drive connection may use (different) previously-saved login information. To do this, open Windows Explorer and click **Tools > Disconnect Mapped Network Drives**.
- Check that the volume in which the share resides, exists and is not down or degraded. If it is down or degraded, see [Section 17.2 on page 353](#).
- Make sure you have the client for Microsoft networks installed and enabled in your network connection's properties.
 - In Windows XP or 2000, click **Start > Settings > Control Panel > Network Connections (Network and Dial-up Connections in Windows 2000/NT) > Local Area Connection > Properties**.
 - Check that **Client for Microsoft Networks** is in the list of components and has its check box selected.

17.6 Users Cannot Access the NSA

A local user cannot access a share

- Check that the NSA is turned on and connected to the network. The local user should try to ping the NSA or use the NAS Starter Utility to discover it.
- The local user should check that he entered his login name and password correctly.
- Check if the share exists and has the correct access settings for this user.

- Check the Access Control List (ACL) of read/write permissions associated with specific files and/or folders. Account names added to the list are linked to the files and folders that they are allowed to access, along with what kinds of actions they are allowed to perform with those files and folders (delete, move, rename, and so on).
- The user's computer may already be connected to another of the NSA's shares using a different user name and/or password. This can happen without the user realizing it if the user's computer automatically connects to a share at logon. Right-click any other connected shares and click **Disconnect**. Then re-attempt to connect to the desired share.
- Check if the share has an ANONYMOUS or EVERYONE access right. If the user is already logged into a share using her username and password, she will NOT be able to access a share that has ANONYMOUS FTP only access rights (as these require 'no login'). In this case she should log out and try to access the share again without logging in. See [Section 9.4 on page 188](#) for more details.
- Check if the shared folder is a subfolder of another (parent) share. Check that the parent share's access rights do not conflict with the subfolder share. It is recommended that you do not create subfolder shares.
- Check if the user belongs to a group with conflicting access rights. **DENY** always takes precedence. If you allow a user **FULL** access to a share but set his group to **DENY**, then he will NOT be able to access the share.
- The local user should check if there are any existing mapped network drives to the NSA. He may need to disconnect existing CIFS connections as new CIFS connection may use previously-saved login information that may be different to NSA login.
- Check that the array in which the share resides, exists and is not down or degraded. If the array is down or degraded, see [Section 17.2 on page 353](#).
- If the user is using DFS links, then he can only access the NSA using CIFS and not FTP.
- Check that the share has not been disabled.

[I cannot import domain user or user group information even though testing of the connection to the domain controller is OK.](#)

- Check the NSA's DNS setting. The DNS server the NSA is using must be able to resolve the domain controller's address. If the domain controller uses a private IP address, the NSA needs to use a private DNS server. If the domain controller uses a public IP address, the NSA needs to use a public DNS server.
- Leave the domain and re-join it.

[A domain user can't access a share.](#)

In addition to the checks listed previously for local users, check that the domain controller is turned on and connected to the network.

A user can access a share but cannot access individual folders or files within the share.

- Check the Access Control List (ACL) of read/write permissions associated with the share's specific files and/or folders. Account names added to the list are linked to the files and folders that they are allowed to access, along with what kinds of actions they are allowed to perform with those files and folders (delete, move, rename, and so on).

I cannot get Windows offline file synchronization to work with the NSA.

Enable oplocks in the **Sharing > Shares > Settings** screen.

17.7 External USB Drives

The **COPY LED** is red.

Copying files from a USB device failed. The USB device may not be compatible with the NSA. Try to save the files onto a computer and then from the computer to the NSA (through the network connection).

17.8 Firmware

I want to know the firmware version on the NSA.

Go to the **Status** screen. The **Firmware** field shows you the current firmware version running.

17.9 File Transfer

I want to transfer my file(s) from my local computer or storage device to the NSA.

- After you initialize your hard disk, you can directly access the folders in your NSA and transfer files in the same way you transfer files in your local computer:
- 1 On your Windows computer, click **Start > Run** or open a web browser.
 - 2 Enter **\\nsa320** (default) or the **Server Name** you assigned the NSA. This shows you the folders in the NSA.
 - 3 Use drag-and-drop or copy-and-paste to transfer files over to your NSA.
 - Use the **COPY/SYNC** button to transfer files from an external (USB) storage device to the NSA.
 - If the file you want to transfer is less than or equal to 2GB, you can use the NSA Starter Utility's zPilot screen (see [Section 2.6 on page 43](#)).

I want to transfer my file(s) from the NSA to my local computer or storage device.

- After you initialize your hard disk, you can directly access the folders in your NSA and transfer files in the same way you transfer files in your local computer:
- 1 On your Windows computer, click **Start > Run** or open a web browser.
 - 2 Enter **\\nsa320** (default) or the **Server Name** you assigned the NSA. This shows you the folders in the NSA.
 - 3 Use drag-and-drop or copy-and-paste to transfer files from your NSA to your local computer's folder or your storage device.
 - You can download the files from your NSA. Just click on the file(s) in the **Share Browsing** screen ([Section 3.4.5 on page 58](#)). Your computer will prompt you for the location where you want to save the file.

17.10 Networking

I want to control who can access my folder(s)/file(s).

- If you are an administrator, you can configure a user's access rights. Use the **Shares** screen (Section 14.3 on page 312) to do this.
- If you enabled **Web Publishing** for a folder, anyone on your network can play the media files in the published shares. No user name and password or other form of security is used. The media server is enabled by default with the video, photo, and music shares published.

One of the computers in my network cannot use the printer I connected to the NSA.

- You must install the printer driver on each computer that will use the printer.
- Check Section 17.4 on page 357 and check for related connectivity issues.

17.11 Some Features' Screens Do Not Display

Many NSA features require a valid internal volume.

Features like the print server, download service, broadcast, FTP and Windows/CIFS access will not work without a valid internal volume. Make sure you have a volume on an internal disk and that the volume is in the healthy state.

- Install an internal disk if one is not installed yet or has failed. See the Quick Start Guide for how to install an internal disk.
- Create a new volume if you do not have one on the internal disk yet.
- Make sure the volume on the installed internal disk is in a healthy state.

I cannot use some applications in the Web Configurator.

- The firmware installed in your NSA includes the features mentioned in [Section 3.5.2 on page 67](#). This does not include the applications you can install using the **Package Management** screen.
- You can use the **Package Management** screen ([Chapter 10 on page 231](#)) to install more applications from a web location (specified in the firmware) to your NSA.
- If you have installed the application and can see the application's configuration screen but still cannot use it, check that you have **Enabled** the application.

17.12 Media Server Functions

I set the media server function to publish a folder, but some of the files in the folder do not display in the list on the media client.

Files with formats that are not supported on the media server may not display in the list. See [Section 18.4 on page 380](#) for the file formats that the media server supports.

I published a folder with the media server function, but the media client does not play some of the files (or does not play them properly).

- 1 Files with formats that are not supported on the media server may not display in the list. See [Section 18.4 on page 380](#) for the file formats that the media server supports.
- 2 If you are using media client software, you may need to install codecs on your computer. Since the media client software uses your computer's installed codecs, files do not play if the required codec is not installed on your computer.
- 3 The media client may not support the file's format.

iTunes does not display the names of all the music files I just put on the NSA.

- 1 Make sure the files are a format supported by iTunes. See [Section 18.5 on page 381](#).

- 2 Go to **Applications > Media Server**. Make sure the share containing the music files is published and the iTunes server option is enabled.
- 3 If an iTunes client is connected, the NSA's iTunes server function scans the published media server folders for files every three minutes. Leave iTunes connected to the NSA for three minutes. Then use the NSA's eject button (as shown next) to disconnect.

Figure 198 iTunes Eject Button



- 4 Then click the NSA's link to reconnect.

Figure 199 iTunes Reconnected



- 5 Another way to get the NSA's iTunes server function to scan the published media server folders for files is to go to **Applications > Media Server** and disable and re-enable the iTunes server option. If you uploaded many files, it may take awhile for the NSA to find and list all of them. Then try reconnecting your iTunes client.

I cannot use iTunes to play files located on my NSA.

- 1 Make sure the files are a format supported by iTunes. See [Section 18.5 on page 381](#).
- 2 If you have files from the iTunes Store that use DRM, you need to use your Apple account ID and password to authorize other computers to play the files. Apple permits you to authorize up to five computers at a time. To authorize a computer, open iTunes and click **Store > Authorize Computer**.
- 3 If you are connecting through a NAT router, make sure that TCP port 3689 and UDP port 5353 are open for traffic on both the server and the client and all points in between (especially the NAT router). If your router includes a firewall, make sure it also allows TCP port 3689 and UDP port 5353 traffic.

17.13 Download Service and Broadcatching Functions

The download list or broadcatching items are missing after I removed a hard drive.

The NSA's download and broadcatching lists are stored on the system volume. If you have two JBOD volumes, it is possible to remove one and still use the other. However if you remove the system volume, you may lose the download and broadcasting lists. With two JBOD volumes, the hard disk that was installed first is usually the system volume.

The channel I added in the **Broadcatching** screen is active but no files are downloaded to the NSA.

Check the **Download Policy** for that channel (see [Section 9.8.1 on page 208](#)). It may be set to manual download. You can configure your NSA to download all items or only new items automatically once the channel is updated.

I cannot find the download files.

By default, the **Download Service** and **Broadcatching** features store downloaded files as follows:

- BitTorrent jobs are stored in /*/incoming (where '*' is a folder that you have set.)
- HTTP/FTP jobs are stored in /* (where '*' is a folder that you have set.)
- All jobs triggered by RSS channels create the subfolder in /* using the channel name where it store all files downloaded from that channel (where '*' is a folder that you have set.)

Check your **Preferences** in the **Download Service** ([Section 9.6 on page 191](#)) and **Broadcatching** ([Section 9.8 on page 206](#)) screens to know or configure where downloaded files are stored.

17.14 Web Publishing

A web-published share cannot be accessed by web browser from the Internet.

- Make sure the person trying to access the share is using the correct web address (and port number if the NSA's web publishing feature is not using port 80). See [page 225](#) for details.
- Make sure the publishing feature is turned on and the share is in the list of published shares.
- Make sure the person trying to access the share is using Internet Explorer 6.0 (and later) or Firefox 1.07 (and later).
- You need to use a public address to access the NSA's web-published shares from the Internet. If your NSA uses a private IP address, use the public IP address of your Internet gateway (firewall) and configure NAT or port forwarding on your Internet gateway and possibly firewall rules in order to let people access the NSA's web-published shares from the Internet.
- Make sure the firewall's public IP address is static or that the firewall uses a Dynamic Domain Name (DDNS).
- Web publishing uses TCP protocol and the port number you specify. Make sure there is not another service using TCP protocol with the same port number. See [Appendix C on page 407](#) for a list of common services and their associated protocols and port numbers.

- If Firefox access to the share does not work, check that you did not set the Web publishing feature to use one of the following ports. (Firefox blocks these ports by default.)

Table 116 Ports Blocked By Default in Firefox

PORT	SERVICE
1	tcpmux
7	echo
9	discard
11	systat
13	daytime
15	netstat
17	qotd
19	chargen
20	ftp data
21	ftp control
22	ssh
23	telnet
25	smtp
37	time
42	name
43	nickname
53	domain
77	priv-rjs
79	finger
87	ttylink

PORT	SERVICE
95	supdup
101	hostrame
102	iso-tsap
103	gppitnp
104	acr-nema
109	POP2
110	POP3
111	sunrpc
113	auth
115	sftp
117	uucp-path
119	NNTP
123	NTP
135	loc-srv epmap
139	netbios
143	IMAP2
179	BGP
389	LDAP
465	SMTP+SSL
512	print exec

PORT	SERVICE
513	login
514	shell
515	printer
526	tempo
530	courier
531	chat
532	netnews
540	uucp
556	remotefs
563	NNTP+SSL
587	submission
601	syslog
636	LDAP+SSL
993	IMAP+SSL
995	POP3+SSL
2049	nfs
4045	lockd
6000	X11

- Make sure your ISP allows you to run a server and is not blocking the port number of the NSA's web publishing feature.

17.15 Auto Upload

The NSA does not automatically upload files to Flickr or YouTube.

- 1 Make sure the NSA is connected to the Internet. See [Section 8.4 on page 175](#) for details about testing network connections.
- 2 Click **Maintenance** > **Log** to check the NSA's log for a message about the file.

- 2a** If the log message displays “no such file or directory”, the file may have been removed from the NSA. Make sure the file still exists in the watch folder.
- 2b** If the log message displays “filename is queued”, the file may still be waiting for auto upload. Check the grace period setting in the service’s **Configuration** screen. You can set a smaller grace period to shorten the queue time.
- 2c** If you cannot find any log messages about the file:
 - Make sure the **Folder Watch List** includes the folder containing the file. You can upload the file to the watch folder again.
 - Make sure the file’s format is supported by Flickr or YouTube. You can find the supported file extensions in the **Folder Watch List**.
- 2d** If the log message displays “not authorized yet”, check if you can enter the NSA’s **Configuration** screen for the service. If you changed the password of your Flickr or YouTube account, you cannot access the service’s **Configuration** screen, and the NSA cannot auto upload files. Make sure you also update the account information in the NSA.
- 3** Make sure the file size does not exceed the limit imposed by the service. At the time of writing, Flickr restricts the file size to 10 MB, and YouTube restricts the file size to 100 MB.
- 4** Make sure you did not exceed the service’s upload quota. Flickr and YouTube have different policies about how much you can upload within a certain period, for example, 100 MB/week.
- 5** The NSA may have temporarily failed to connect to the service. You can upload the file to the watch folder again.

17.16 Package Management

The NSA won’t install the package(s) I selected in the **Package Management** screen.

- The web location of the package may be undergoing maintenance. Try again at a later time. Upgrade the firmware of the NSA.
- If a new firmware is available, do an upgrade and try installing the package(s) again.

The eMule **Search** screen does not work.

You need to be connected to an eMule server before you can use the **Search** screen. Wait for the NSA to connect to a server before configuring the **Search** screen.

I want to know how my hard disk is performing.

Use S.M.A.R.T. (Self Monitoring, Analysis, and Reporting Technology) to monitor hard disks. It detects and reports the reliability of hard disks using standard indicators, enabling administrators to anticipate possible disk failures. Go to the **Package Management** screen to install the S.M.A.R.T. application.

17.17 Backups

I cannot make a backup.

- Check that enough space is available on the external disk. If there isn't you may need to purge older backups or delete other files on the backup USB disk or NSA (see [Section 10.9 on page 261](#)).
- If you are using **BackupPlanner** ([Section 10.10 on page 261](#)):
 - You can look at the **Backup** screen's **Last Run Result** display.
 - If you're backing up to another NSA, another NSA, or a computer, check that it allows the NSA to write files to it. For a synchronization backup, the target must be another NSA or another compatible model.
 - Check that the NSA is not performing another backup job. **Scheduler** queues backups when a different backup is already going on at the time a backup is scheduled.

The backup does not run at the time configured.

- Check that the correct time is configured on the NSA.
- Check that the NSA is able to access the time server from which it gets the time; see [Section 6.5 on page 155](#).

Product Specifications

See also [Chapter 1 on page 23](#) for a general overview of the key features.

18.1 Physical Features

These are the main external physical features.

Table 117 Physical Features

USB Ports	<p>3 USB (version 2) ports.</p> <p>Copy or sync files directly from the NSA to compatible USB devices like card readers, MP3 players, mass storage devices, and digital cameras without using a computer. Copy or sync files directly from a USB device to the NSA.</p> <p>Expand the NSA's storage capacity with compatible USB devices (like hard drives).</p>
Gigabit Ethernet Port	<p>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.</p> <p>Actual data throughput varies depending on the network conditions and environmental factors, including volume of network traffic, network overhead and building materials.</p>
SATA Interface	<p>The NSA supports two SATA II interfaces (backwards compatible to SATA). Serial ATA is a low cost interface technology that allows high speed data transfer. Serial ATA also allows more efficient internal airflow and smaller chassis design.</p>

Table 117 Physical Features (continued)

Power Button	<p>Press the Power button for one second to turn it on.</p> <p>Turn off the NSA before unplugging it.</p> <p>Press the Power button for 3 seconds until you hear one beep, then release it. The NSA goes starts to shutdown its software and turns off.</p> <p>Press the Power button for 5 seconds until you hear two beeps, then release it. The NSA turns off immediately.</p>
COPY/SYNC Button	<p>The COPY/SYNC button is used to copy or sync data from the NSA to a compatible external (USB) storage device or from the external (USB) storage device to the NSA.</p> <p>Press the COPY/SYNC button to copy data from Public folder (default) of the NSA. Use the Web Configurator to configure the folder locations for the COPY/SYNC function. During the data transfer, the COPY LED blinks and stops when the transfer is complete.</p> <p>If you want to sync the data in the NSA with the external (USB) storage device, press the COPY/SYNC button until you hear one beep.</p> <p>If the COPY LED turns red, an error has occurred and the transfer is stopped. Press the COPY/SYNC button once and the COPY LED turns green.</p>
RESET Button	<p>Press the RESET button until you hear one beep then release it to reset the NSA's IP address and password to the default values.</p> <p>Press the RESET button until you hear two beeps. After the second beep, continue pressing the button for five more seconds, then release it. You will hear three quick beeps after you release the button. This resets the NSA to the factory default configuration. All settings you have configured on the NSA, including IP address, password, user accounts, groups, and so on will be reset to the factory defaults.</p> <p>The reset process does NOT affect the volume settings, nor data stored on the NSA.</p>

18.2 Firmware Features

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

Table 118 Firmware Features

DLNA Server	The NSA is a DLNA-compliant media server that lets DLNA-compliant media clients play video, audio, and photo content files stored on the NSA.
RAID File Storage	Use RAID 1 if you have two drives and want to mirror primary data to the second drive. If one drive fails, replace it and then re-synchronize to recover all data.
User Passwords	Configure a password for an individual User to restrict access to the NSA.
Client Support	Data can be shared among all Windows users that have FTP client software or CIFS file sharing support. The NSA is also a DLNA-certified media server that lets DLNA-compliant media clients play video, audio, and photo content files stored on the NSA.
HTTP and HTTPS	Access the NSA using a regular web connection (HTTP) or secure web connection (HTTPS).
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 a platform-independent web-based utility that allows you to easily access the NSA's management settings.
Hard Disk Drive Power Saving	If a hard disk inside the NSA is idle for a specific number of minutes, the NSA puts it to sleep until you use it again. The default is 15 minutes. You can configure it.
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.
NAS Starter Utility	Use the NAS Starter Utility 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.
Memeo Autobackup	Memeo Autobackup is a tool for Windows users to create backups of data stored on their Windows computers to an NSA. This software is included on the CD.
Time and Date	Configure a time server and set a time zone for your NSA to show the correct times in logs.

Table 118 Firmware Features (continued)

Auto Upload	The auto upload feature uploads media files stored in the NSA to the Flickr and/or YouTube sharing websites. It is a convenient way to share media files with your friends and family. You can link the NSA to your Flickr and/or YouTube account and select shares for the NSA to upload. The NSA uploads the media files stored in the specified shares to your Flickr and/or YouTube account. When you add new files to the specified shares, the NSA also automatically uploads the new files to your Flickr and/or YouTube account.
iTunes Server	The NSA can mimic the iTunes application and download content from the iTunes server.
Package Management	Package Management can be used to set up more useful applications in your NSA, including eMule, DyDNS, NFS, SMART, BackupPlanner, Gallery, PHP-MySQL-phpMyAdmin, SqueezeCenter and WordPress. The NSA can download multiple packages/files at once and automatically goes through all the installation steps.
DyDNS	Dynamic DNS allows you to update your current dynamic IP address with a dynamic DNS service so that anyone can contact you (in NetMeeting, CUSeeMe, etc.). You can also access your FTP server or Web site on your own computer using a domain name (for instance myhost.dhs.org, where myhost is a name of your choice) that will never change instead of using an IP address that changes each time you reconnect. Your friends or relatives will always be able to call you even if they don't know your IP address.
Download Service	The NSA's download service downloads files from the Internet directly to the NSA. You do not have to download to your computer and then copy to the NSA. This can free up your computer's system resources. The download service also handles your broadcatching downloads.
Power Schedule	Use this screen to manage power settings for the NSA, including power saving, UPS, power on/off during power failure and power on/off schedule.

18.3 Specification Tables

The NSA hardware specifications are shown in the following table.

Table 119 NSA Hardware Specifications

Default IP Address	DHCP client. If no DHCP server is found, the NSA uses Auto-IP to choose an IP address in the 169.254.X.X subnet (where X is a number from 1 to 254).
Default Subnet Mask	DHCP client by default. If no DHCP server is found, the subnet mask defaults to 255.255.255.0 (24 bits).
Default Username	admin

Table 119 NSA Hardware Specifications (continued)

Default Password	1234
Dimensions	108 (W) x 205 (D) x147 (H) mm (4.3 (W) x 5.8 (D) x 8.1 (H) inch)
Weight	1.02 kg (2.25 lb.) without hard drives
Drive Bays	Two
Compatible Hard Disks	SATA I and SATA II 3.0 Gbit/s (Serial Advanced Technology Attachment) compatible hard drives.
Maximum Number of Folders Per Share	The NSA's media server function can detect up to 8,000 folders within a single published share. After 8,000 folders have been created, new folder contents will not be added to the media server's list. However you can still access the folders using Samba.
Ports	
Ethernet	One auto-negotiating, auto MDI/MDI-X 10/100/1000 ^A Mbps RJ-45 Ethernet port (1000BASE-T)
USB v2.0 Storage	Two ports in the back panel and one port in the front panel. Windows: FAT32 and FAT16 Linux: ReiserFS, XFS, EXT2, and EXT3.
LEDs	PWR, SYSTEM, HDD1, HDD2, USB and COPY.
Operating Temperature	0° C ~ 40° C
Power Supply	Input: 100 - 240 V AC Output: 19 V DC, 2.1 A
Storage Temperature	-30° C ~ 70° C
Operating Humidity	0% ~ 95% RH (non-condensing)
Storage Humidity	0% ~ 95% RH (non-condensing)
Certifications	Device: CE, FCC Part 15B, C-Tick, BSMI Power Adapter: CE, FCC, CUL, TUV/GS, RCM, BSMI, Efficiency Level V (CEC regulation)

A. Use an 8-wire Ethernet cable for Gigabit connections.

The NSA firmware specifications are shown in the following table

Table 120 NSA Firmware Specifications

File Storage System	JBOD, RAID 0, RAID 1
Network Protocols	TCP/IP, UDP/IP DHCP Client FTP, FTPES (TLS explicit mode) HTTP, HTTPS
File Management	Create/Delete System Volume

Table 120 NSA Firmware Specifications (continued)

Network File Sharing Protocol	CIFS/SMB for Windows HTTP for web browser FTP, FTPES (TLS explicit mode)
Network Security	Authentication Share level
Supported Operating Systems	Windows XP (SP2, SP3) Windows Vista (32 bit) Windows 7 (32 and 64 bit)
Maximum Number of Users Allowed	256 ^A
Maximum Number of Groups Allowed	128 ^B
Maximum Number of Concurrent FTP Sessions	128 ^A
Maximum Number of Concurrent CIFS Sessions	32 ^A
System Management	Remote Management via Web Configurator (HTTP and HTTPS) NAS Starter Utility
Logging/Monitoring	Centralized Logs
Firmware Upgrade	Web Configurator
Web Browsers Supported	Internet Explorer 6.0 and later versions Firefox 2.00 and later versions Chrome 4.00 and later versions

A. Limits may vary depending on user-share resource usage.

B. Limits may vary depending on user-share resource usage.

The following list, which is not exhaustive, illustrates the standards and recommendations supported in the NSA.

Table 121 Supported Standards and Recommendations

CSS level 1	Cascading Style Sheets.
CSS level 2 revision 1 ("CSS 2.1")	Cascading Style Sheets.
DATETIME	"Date and Time Formats", W3C (World Wide Web Consortium) Note, M. Wolf and C. Wicksteed, 15 September 1997. Revised 27 August 1998. See http://www.w3.org/TR/1998/NOTE-datETIME-19980827
DLNA v1.5 Server	The DLNA (Digital Living Network Alliance) group of companies works to make products compatible and able to work in a home network in order to make digital living easy and seamless. DLNA clients play files stored on DLNA servers.
ECMA-262	The original ECMAScript standard, also known as JavaScript.

Table 121 Supported Standards and Recommendations (continued)

ECMA-262 Edition 2	The ECMAScript standard's second revision; also ISO standard 16262.
ECMA-262 Edition 3	The ECMAScript standard's third revision; corresponds to JavaScript 1.5.
ECMA-357	ECMAScript for XML (E4X). See also the E4X errata.
HTML 3.2 Reference Specification	The HyperText Markup Language (HTML).
HTML 4.01 Specification	Defines the HyperText Markup Language (HTML), the publishing language of the World Wide Web.
ISO 3166-1	Country names (official short names in English) in alphabetical order as given in ISO 3166-1 and the corresponding ISO 3166-1-alpha-2 code elements.
ISO 639-2	Two-letter and three-letter language code sets.
MIMETYPES	IANA registered content types (MIME types). See the IANA web site (ftp://ftp.isi.edu/in-notes/iana/assignments/media-types/).
ISO 15740	Picture Transfer Protocol (PTP) from the International imaging Industry Association allows you to transfer pictures from digital cameras or other devices without needing additional device drivers.
RFC 1001	(STD-19) - Protocol standard for NetBIOS service on a TCP/UDP transport: Concepts and methods
RFC 1002	(STD-19) - Protocol standard for NetBIOS service on a TCP/UDP transport: Detailed specifications
RFC 1034	(STD-13) - Domain names - concepts and facilities
RFC 1035	(STD-13) - Domain names - implementation and specification
RFC 1305	Network Time Protocol (NTP version 3)
RFC 1415	FTP-FTAM Gateway Specification
RFC 1510	The Kerberos Network Authentication Service (V5)
RFC 1738	Uniform Resource Locators (URL)
RFC 1808	Relative Uniform Resource Locators
RFC 1945	The Hypertext Transfer Protocol (HTTP) 1.0.
RFC 2131	Dynamic Host Configuration Protocol
RFC 2396	Uniform Resource Identifier (URI)
RFC 2396	Uniform Resource Identifiers (URI): Generic Syntax
RFC 2616	Hypertext Transfer Protocol (HTTP) 1.1.
RFC 2854	History of HTML development, and lists the relevant W3C (World Wide Web Consortium) recommendations for the "text/html" MIME type.
RFC 3066, BCP 47 (Best Current Practice)	Language tags
RFC 3282	"Content-language:" headers.
RFC 3986	(STD-66) - Uniform Resource Identifier (URI): Generic Syntax
RFC 4120	The Kerberos Network Authentication Service (V5)

Table 121 Supported Standards and Recommendations (continued)

RFC 4248	The telnet URI Scheme
RFC 793	(STD-7) - Transmission Control Protocol
RFC 959	(STD-9) - File Transfer Protocol
SATA	SATA I and SATA II 3.0 Gbit/s (Serial Advanced Technology Attachment) compatible hard drives.
UPnP	Universal Plug and Play (UPnP) is a distributed, open networking standard that uses TCP/IP for simple peer-to-peer network connectivity between devices.
USB 2.0	USB (Universal Serial Bus) version 2.0 allows for interfacing devices with data transfers rates of up to 480 Mbps.
XHTML 1.0	Extensible HyperText Markup Language (Second Edition)
XHTML 1.1	Module-based XHTML

18.4 Supported Media Server Content Formats

The following describes the details about the files that the NSA media server can publish.

Table 122 Supported Media Server Content Formats

CATEGORY	FILE TYPE	EXTENSION
Video	MPEG-1/MPEG-2	dat, dvr-ms, iso, m1v, m2p, m2t, m2v, mp2, mpe, mpeg, mpeg2, mpg, mpg2, ts, vob, m2ts, tts
	MPEG-4	m4v, mp4
	AVI	avi
	DivX	divx, avi
	Motion JPEG	mjpeg, mjpg
	Quick Time Video	mov, qt
	RealMedia	rmvb, rm
	Ogg	ogm
	Matroska	mkv
	ASF	asf
	Windows Media Video	asf, wmv
	ISO	iso
	Flash Video	flv
	Subtitle	srt, ssa, idx, sub

Table 122 Supported Media Server Content Formats (continued)

CATEGORY	FILE TYPE	EXTENSION
Music	MP3	mp3, mpa
	Ogg Vorbis	ogg
	RealMedia	ra, ram
	WAVE	wav
	Windows Media Audio	wma
	Matroska	mka
	Monkeys Audio	ape
	MP1	mp1
	MP4	mp4, m4a, m4p
	PCM	pcm
	LPCM	lpcm
	DTS	dtc
	AC3	ac3
	Free Lossless Audio Codec	flac
	Au	au
	AAC	aac
	3GPP	3gp, 3g2
	AIFF	aif, aiff
	RIFF-based MIDI	rmi
Playlist	wpl, pls, asx, wax, m3u	
Photo	Bitmap	bmp
	JPEG	jpe, jpeg, jpg
	PNG	png

Note: Not all published file types can be viewed by all client applications.

18.5 Supported iTunes Server Content Formats

At the time of writing, the NSA supports iTunes publishing audio files of the following formats: mp3, m4a, m4p, wav, and mp4.

18.6 Power Consumption

The NSA's power consumption was tested using two 7,200 RPM 1.5 TB hard drives and 3 USB storage devices.

Note: These are results from a laboratory test and are for your reference only.

Table 123 Power Consumption in Watts (W)

POWER MODE	POWER CONSUMPTION
Access Mode	32.2 Watts
Hard Disk Hibernation Mode	10 Watts

Setting Up Your Computer's IP Address

Note: Your specific NSA may not support all of the operating systems described in this appendix. See the product specifications for more information about which operating systems are supported.

This appendix shows you how to configure the IP settings on your computer in order for it to be able to communicate with the other devices on your network.

If you manually assign IP information instead of using a dynamic IP, make sure that your network's computers have IP addresses that place them in the same subnet.

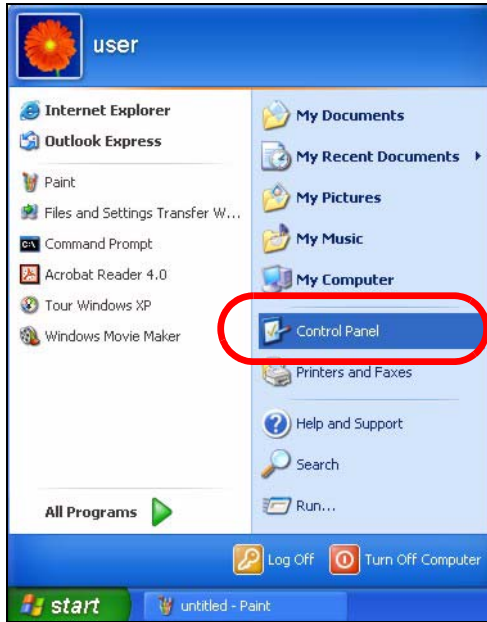
In this appendix, you can set up an IP address for:

- [Windows XP/NT/2000](#) on [page 384](#)
- [Windows Vista](#) on [page 387](#)
- [Windows 7](#) on [page 391](#)

Windows XP/NT/2000

The following example uses the default Windows XP display theme but can also apply to Windows 2000 and Windows NT.

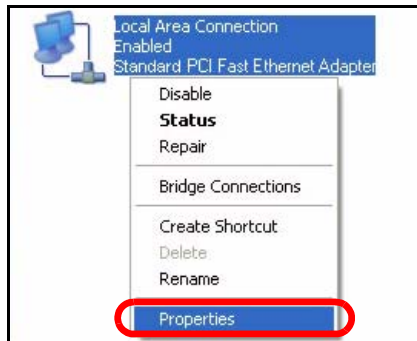
- 1 Click **Start > Control Panel**.



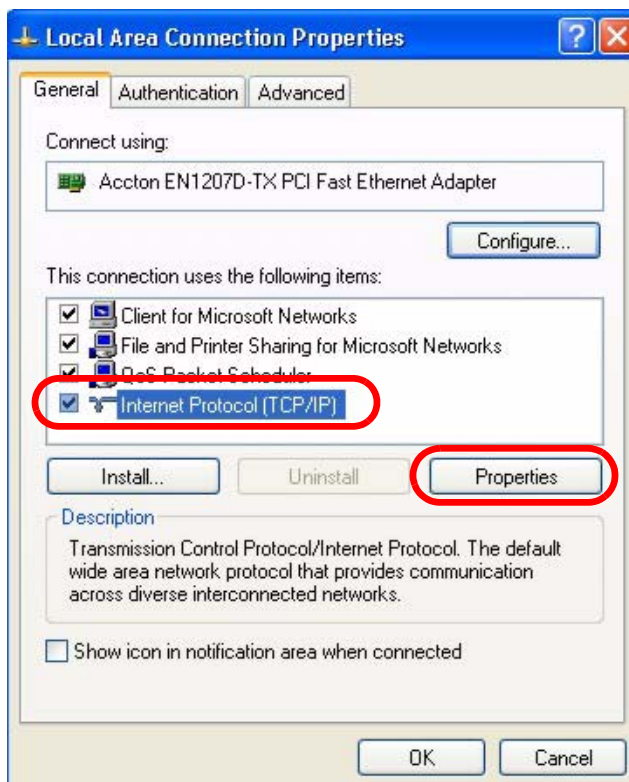
- 2 In the **Control Panel**, click the **Network Connections** icon.



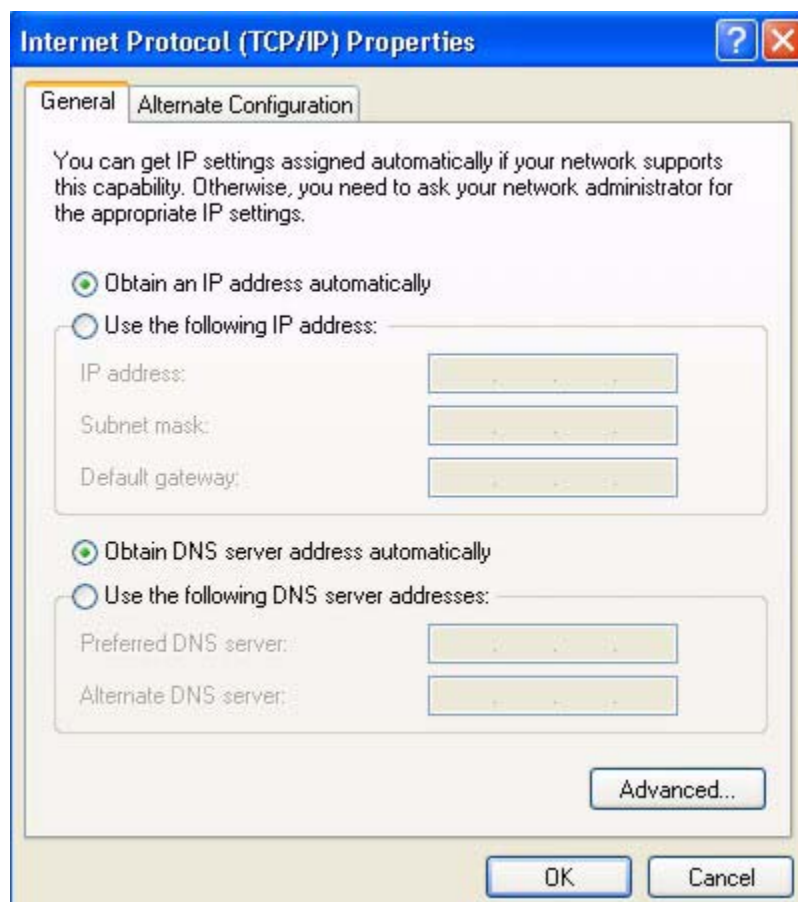
- 3 Right-click **Local Area Connection** and then select **Properties**.



- 4 On the **General** tab, select **Internet Protocol (TCP/IP)** and then click **Properties**.



- 5 The **Internet Protocol TCP/IP Properties** window opens.



- 6 Select **Obtain an IP address automatically** if your network administrator or ISP assigns your IP address dynamically.

Select **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields if you have a static IP address that was assigned to you by your network administrator or ISP. You may also have to enter a **Preferred DNS server** and an **Alternate DNS server**, if that information was provided.

- 7 Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.
- 8 Click **OK** to close the **Local Area Connection Properties** window.

Verifying Settings

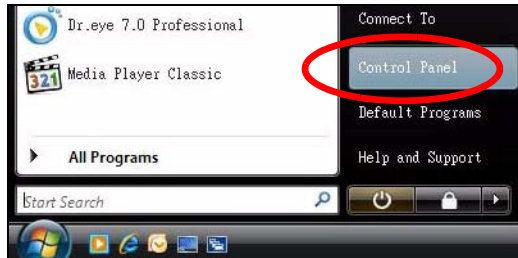
- 1 Click **Start > All Programs > Accessories > Command Prompt**.
- 2 In the **Command Prompt** window, type "ipconfig" and then press [ENTER].

You can also go to **Start > Control Panel > Network Connections**, right-click a network connection, click **Status** and then click the **Support** tab to view your IP address and connection information.

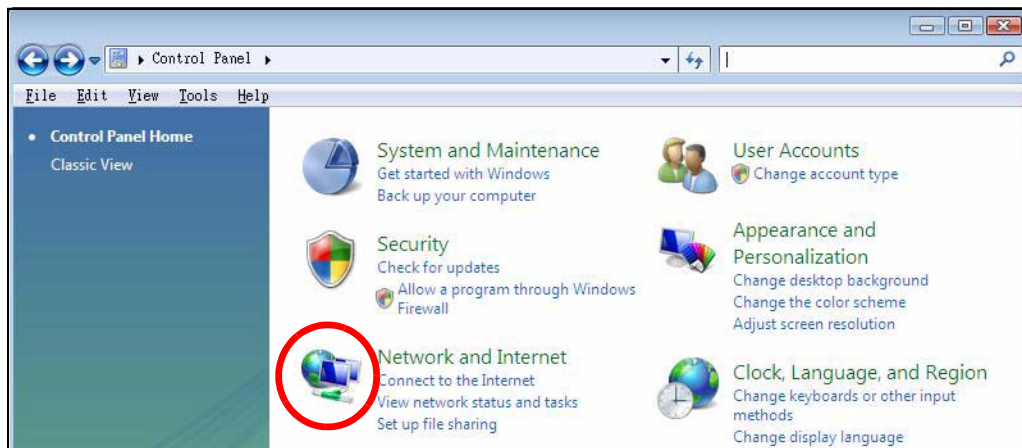
Windows Vista

This section shows screens from Windows Vista Professional.

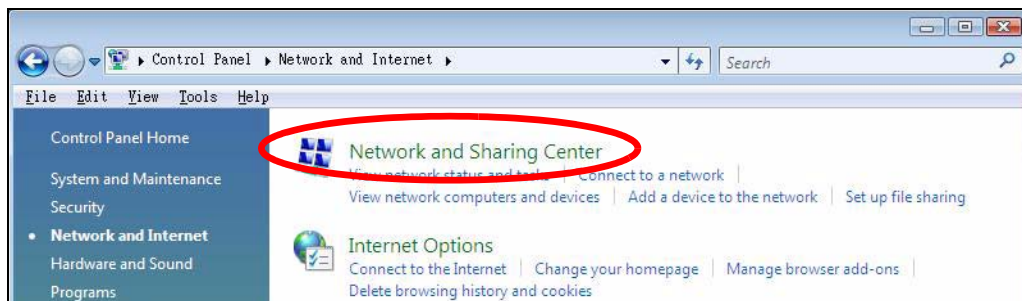
- 1 Click **Start > Control Panel**.



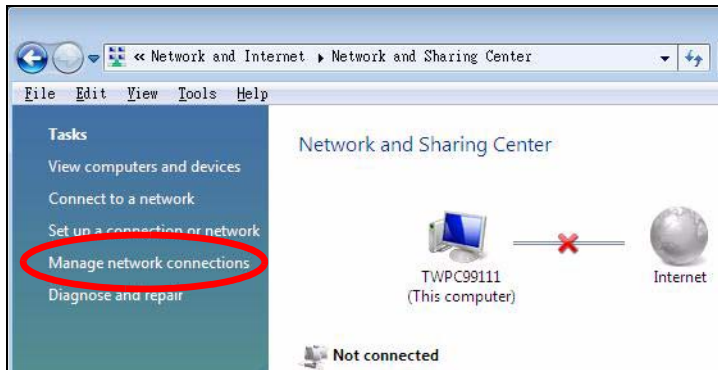
- 2 In the **Control Panel**, click the **Network and Internet** icon.



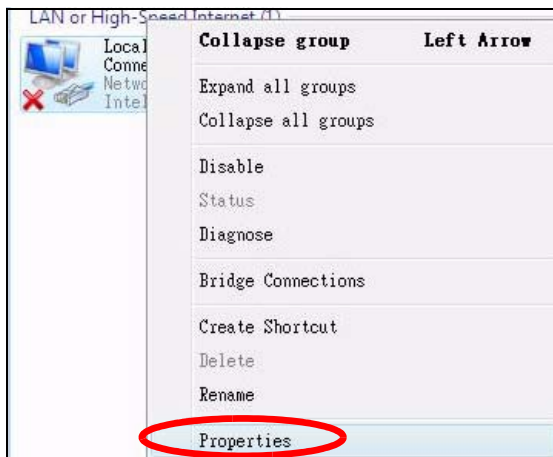
- 3 Click the **Network and Sharing Center** icon.



4 Click **Manage network connections**.

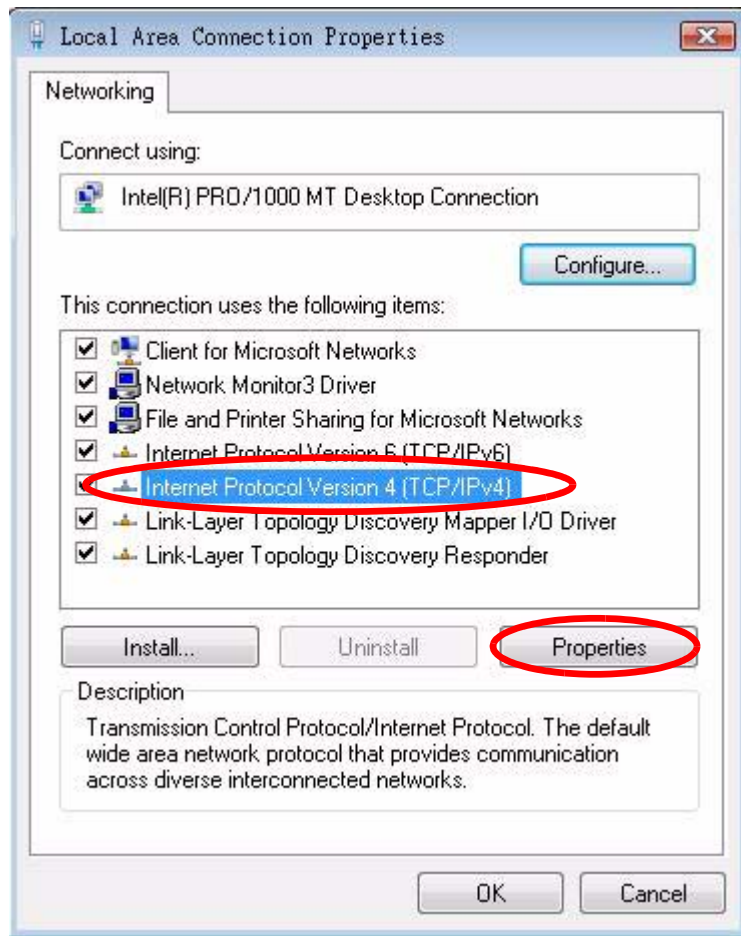


5 Right-click **Local Area Connection** and then select **Properties**.

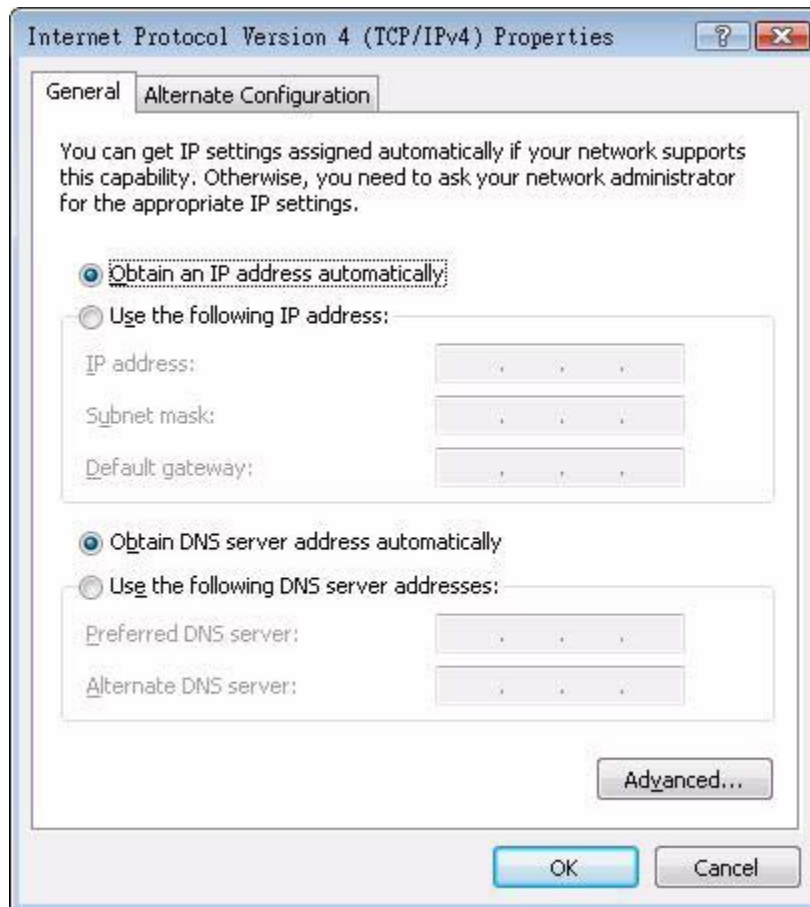


Note: During this procedure, click **Continue** whenever Windows displays a screen saying that it needs your permission to continue.

6 Select **Internet Protocol Version 4 (TCP/IPv4)** and then select **Properties**.



- 7 The **Internet Protocol Version 4 (TCP/IPv4) Properties** window opens.



- 8 Select **Obtain an IP address automatically** if your network administrator or ISP assigns your IP address dynamically.

Select **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields if you have a static IP address that was assigned to you by your network administrator or ISP. You may also have to enter a **Preferred DNS server** and an **Alternate DNS server**, if that information was provided. Click **Advanced**.

- 9 Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.
- 10 Click **OK** to close the **Local Area Connection Properties** window.

Verifying Settings

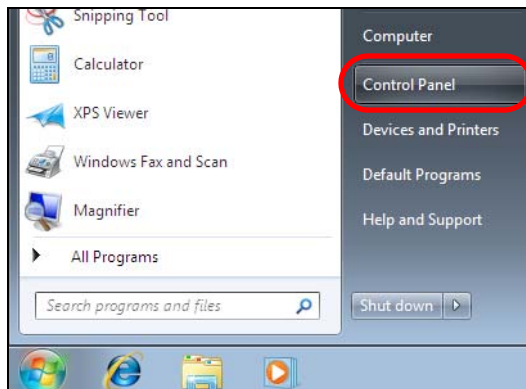
- 1 Click **Start > All Programs > Accessories > Command Prompt**.
- 2 In the **Command Prompt** window, type "ipconfig" and then press [ENTER].

You can also go to **Start > Control Panel > Network Connections**, right-click a network connection, click **Status** and then click the **Support** tab to view your IP address and connection information.

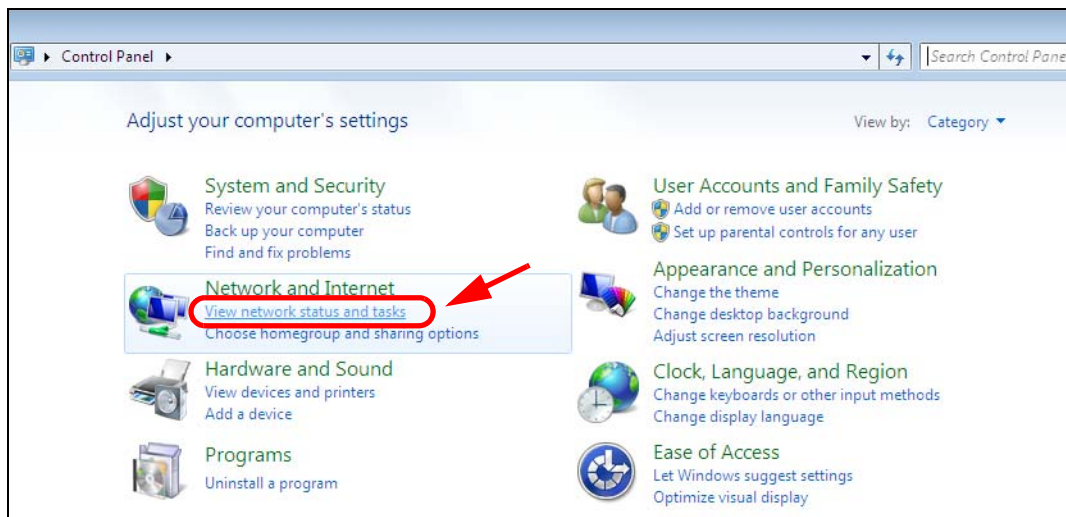
Windows 7

This section shows screens from Windows 7 Enterprise.

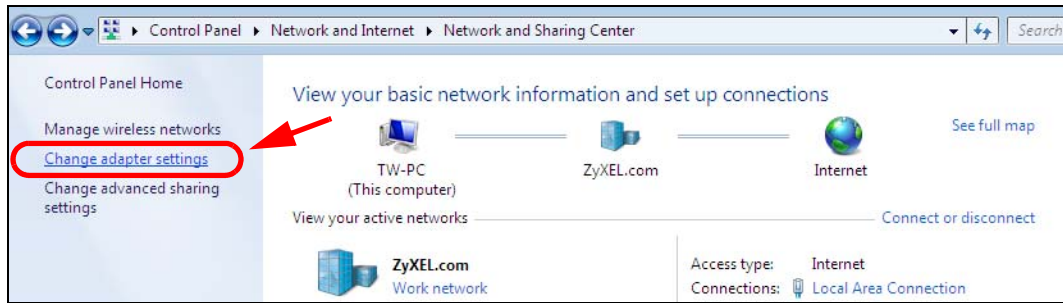
- 1 Click **Start > Control Panel**.



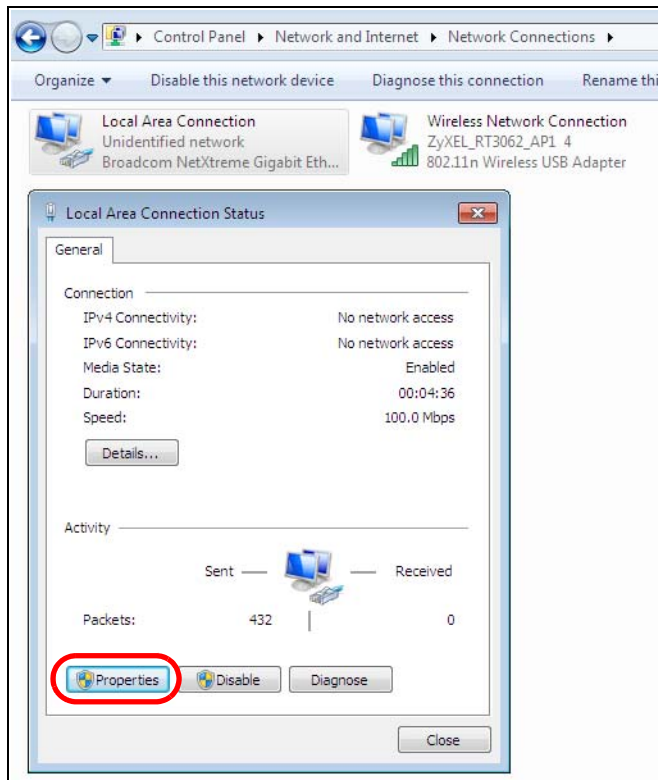
- 2 In the **Control Panel**, click **View network status and tasks** under the **Network and Internet** category.



3 Click **Change adapter settings**.

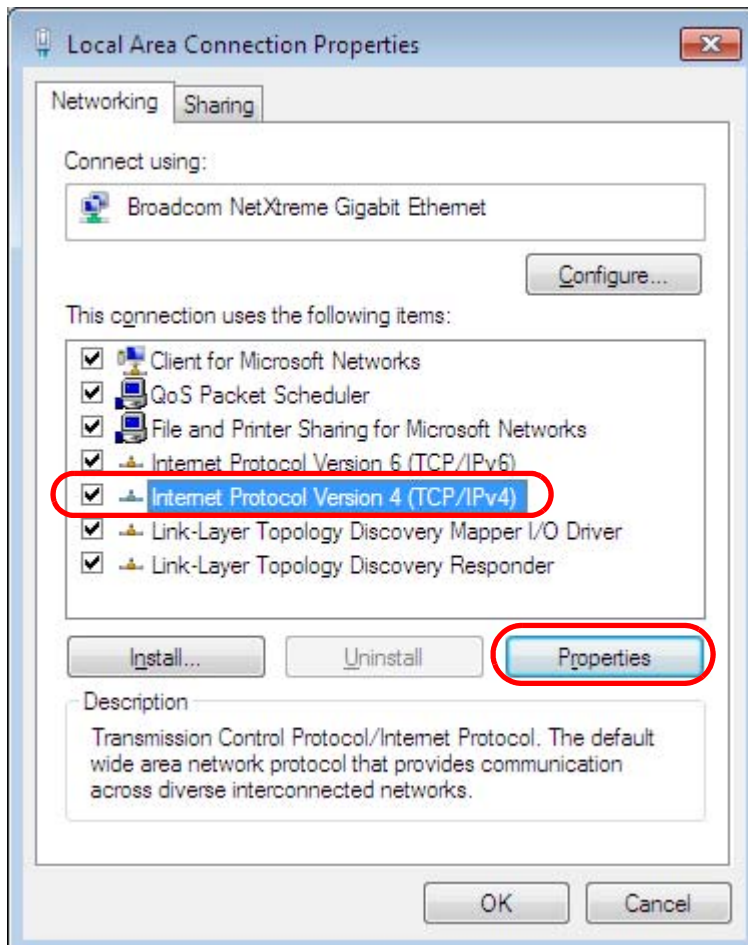


4 Double click **Local Area Connection** and then select **Properties**.

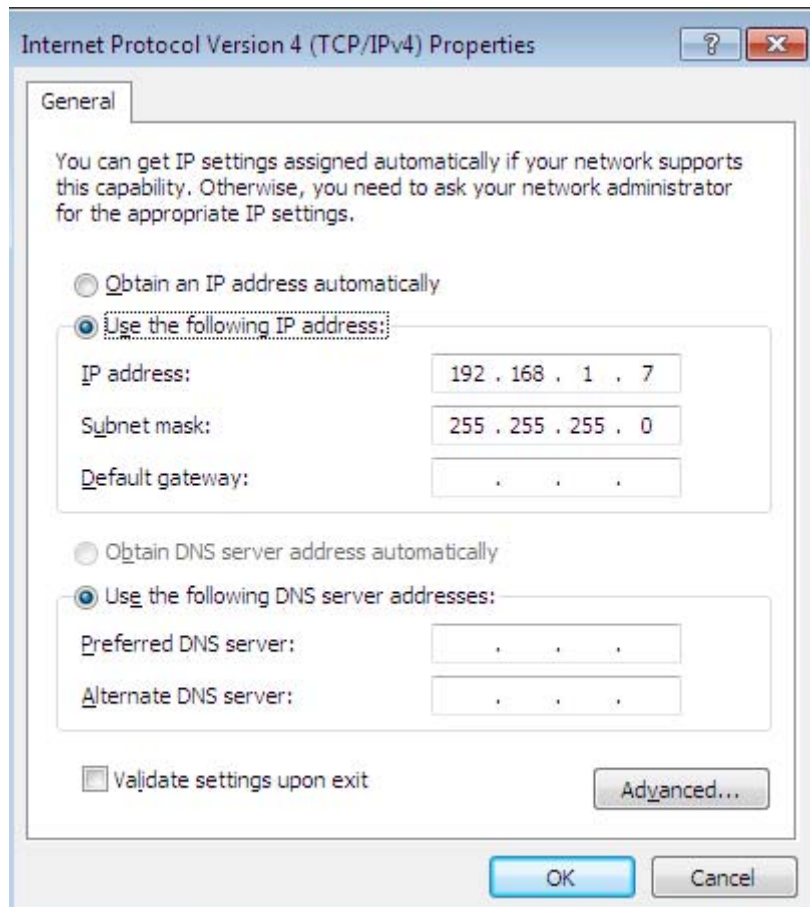


Note: During this procedure, click **Continue** whenever Windows displays a screen saying that it needs your permission to continue.

5 Select **Internet Protocol Version 4 (TCP/IPv4)** and then select **Properties**.



- 6 The **Internet Protocol Version 4 (TCP/IPv4) Properties** window opens.



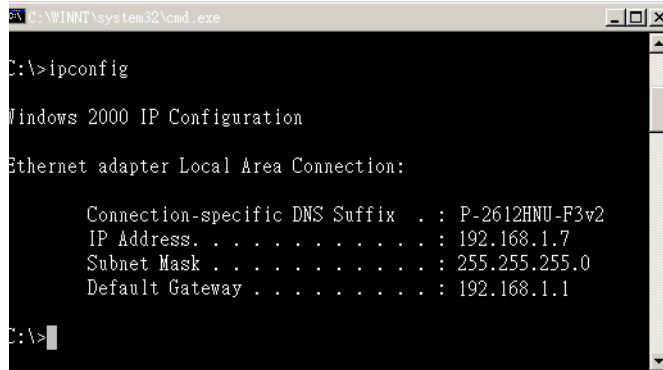
- 7 Select **Obtain an IP address automatically** if your network administrator or ISP assigns your IP address dynamically.

Select **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields if you have a static IP address that was assigned to you by your network administrator or ISP. You may also have to enter a **Preferred DNS server** and an **Alternate DNS server**, if that information was provided. Click **Advanced** if you want to configure advanced settings for IP, DNS and WINS.

- 8 Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.
- 9 Click **OK** to close the **Local Area Connection Properties** window.

Verifying Settings

- 1 Click **Start > All Programs > Accessories > Command Prompt**.
- 2 In the **Command Prompt** window, type "ipconfig" and then press [ENTER].
- 3 The IP settings are displayed as follows.



```
C:\WINNT\system32\cmd.exe
C:\>ipconfig

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : P-2612HNU-F3v2
    IP Address. . . . .               : 192.168.1.7
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         : 192.168.1.1

C:\>
```


Pop-up Windows, JavaScripts and Java Permissions

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

- Web browser pop-up windows from your device.
- JavaScripts (enabled by default).
- Java permissions (enabled by default).

Note: Internet Explorer 6 screens are used here. Screens for other Internet Explorer versions may vary.

Internet Explorer Pop-up Blockers

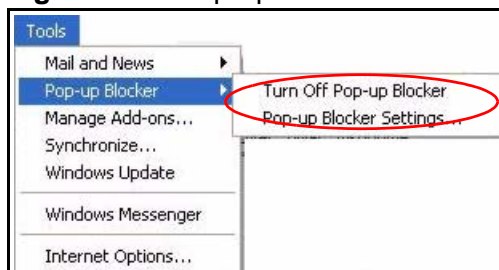
You may have to disable pop-up blocking to log into your device.

Either disable pop-up blocking (enabled by default in Windows XP SP (Service Pack) 2) or allow pop-up blocking and create an exception for your device's IP address.

Disable Pop-up Blockers

- 1 In Internet Explorer, select **Tools, Pop-up Blocker** and then select **Turn Off Pop-up Blocker**.

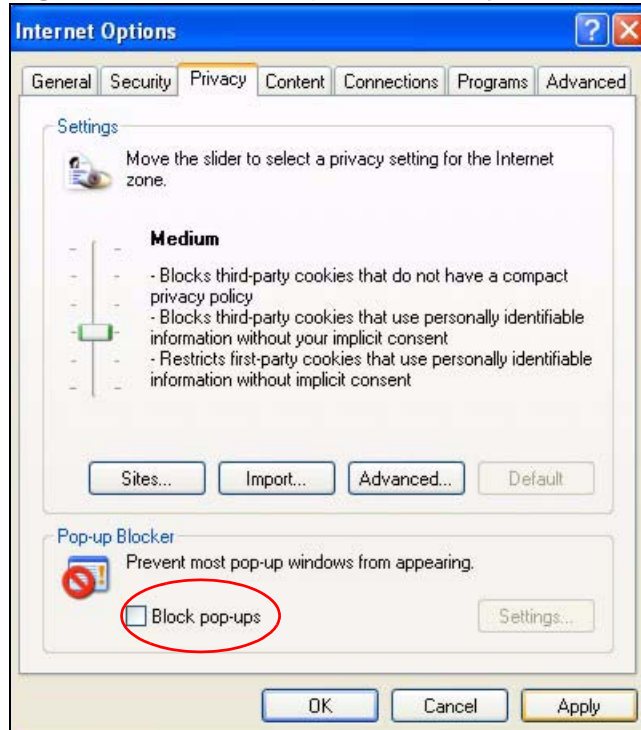
Figure 200 Pop-up Blocker



You can also check if pop-up blocking is disabled in the **Pop-up Blocker** section in the **Privacy** tab.

- 1 In Internet Explorer, select **Tools, Internet Options, Privacy**.
- 2 Clear the **Block pop-ups** check box in the **Pop-up Blocker** section of the screen. This disables any web pop-up blockers you may have enabled.

Figure 201 Internet Options: Privacy



- 3 Click **Apply** to save this setting.

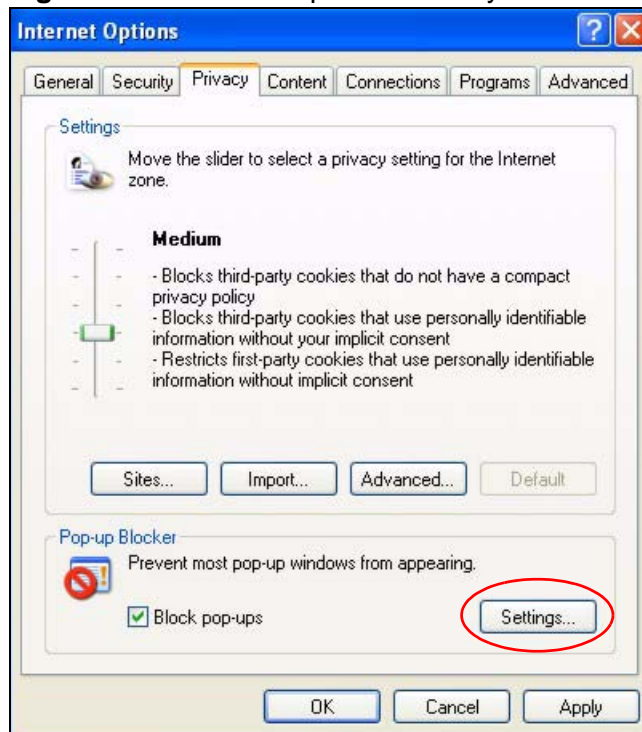
Enable Pop-up Blockers with Exceptions

Alternatively, if you only want to allow pop-up windows from your device, see the following steps.

- 1 In Internet Explorer, select **Tools, Internet Options** and then the **Privacy** tab.

- 2 Select **Settings...** to open the **Pop-up Blocker Settings** screen.

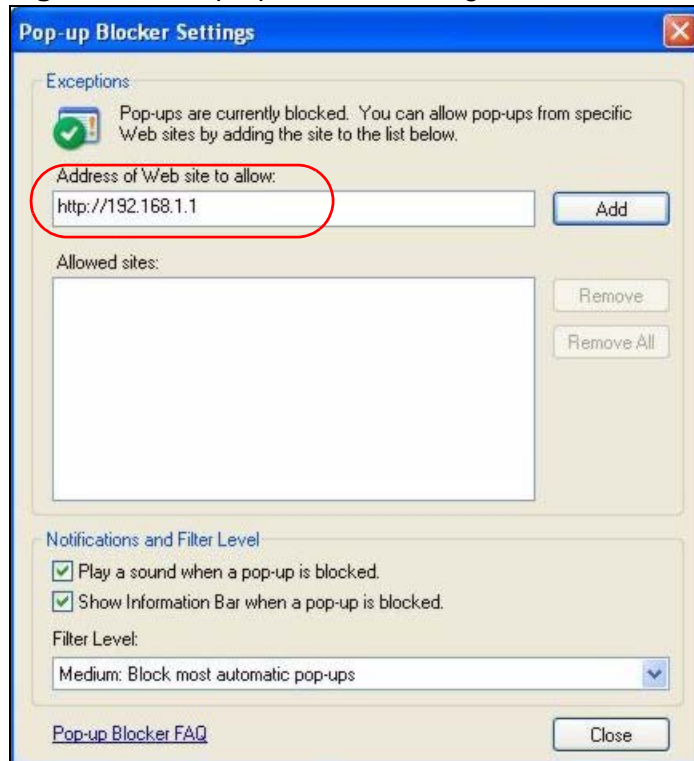
Figure 202 Internet Options: Privacy



- 3 Type the IP address of your device (the web page that you do not want to have blocked) with the prefix "http://". For example, http://192.168.167.1.

- 4 Click **Add** to move the IP address to the list of **Allowed sites**.

Figure 203 Pop-up Blocker Settings



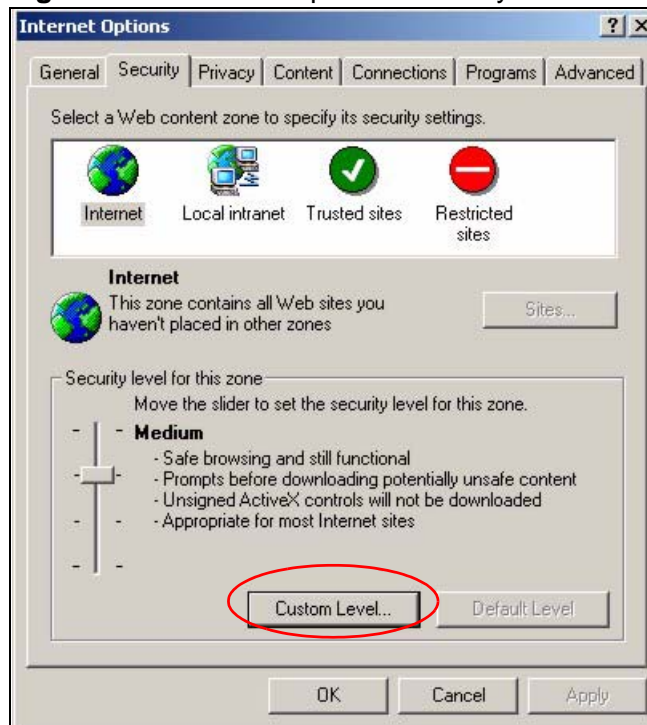
- 5 Click **Close** to return to the **Privacy** screen.
- 6 Click **Apply** to save this setting.

JavaScripts

If pages of the web configurator do not display properly in Internet Explorer, check that JavaScripts are allowed.

- 1 In Internet Explorer, click **Tools**, **Internet Options** and then the **Security** tab.

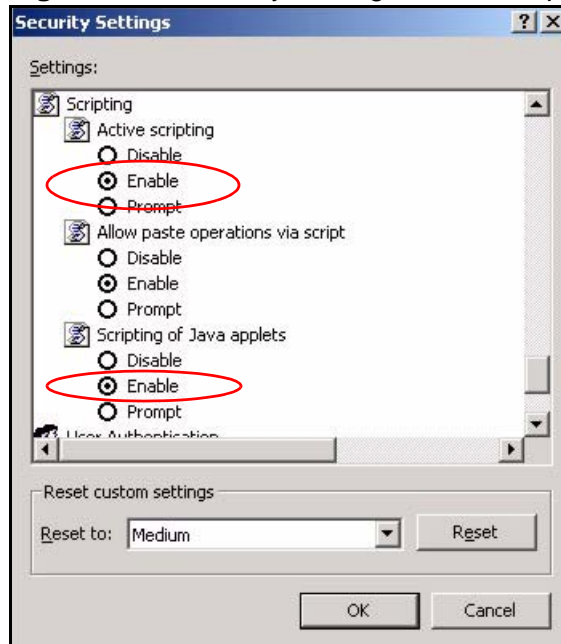
Figure 204 Internet Options: Security



- 2 Click the **Custom Level...** button.
- 3 Scroll down to **Scripting**.
- 4 Under **Active scripting** make sure that **Enable** is selected (the default).
- 5 Under **Scripting of Java applets** make sure that **Enable** is selected (the default).

- 6 Click **OK** to close the window.

Figure 205 Security Settings - Java Scripting

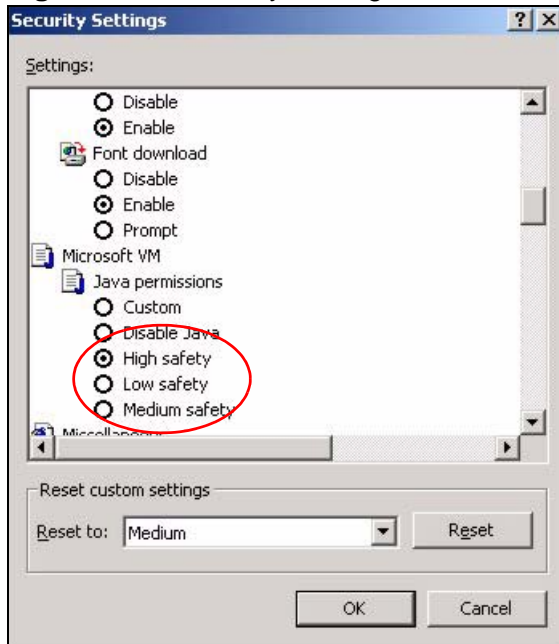


Java Permissions

- 1 From Internet Explorer, click **Tools, Internet Options** and then the **Security** tab.
- 2 Click the **Custom Level...** button.
- 3 Scroll down to **Microsoft VM**.
- 4 Under **Java permissions** make sure that a safety level is selected.

- 5 Click **OK** to close the window.

Figure 206 Security Settings - Java

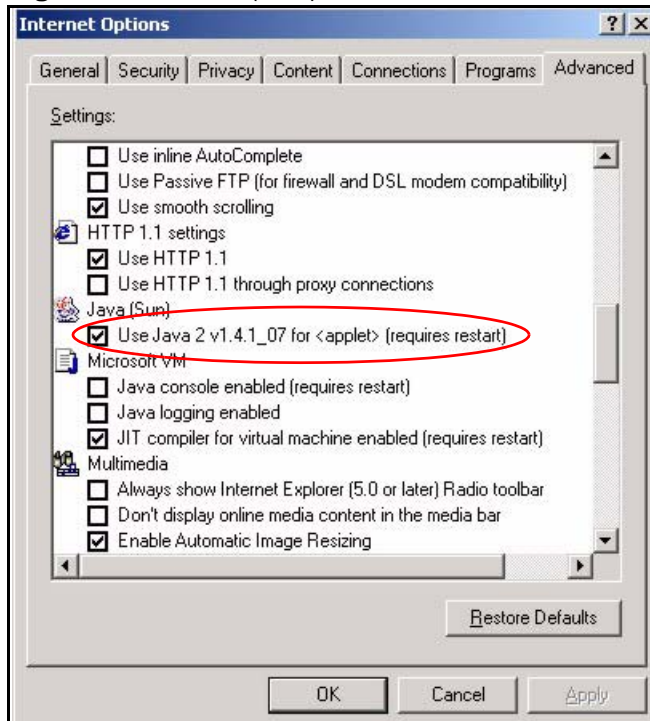


JAVA (Sun)

- 1 From Internet Explorer, click **Tools, Internet Options** and then the **Advanced** tab.
- 2 Make sure that **Use Java 2 for <applet>** under **Java (Sun)** is selected.

- 3 Click **OK** to close the window.

Figure 207 Java (Sun)

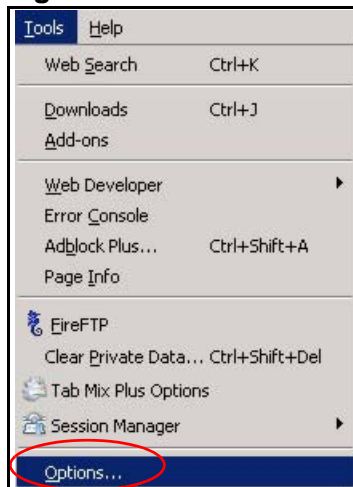


Mozilla Firefox

Mozilla Firefox 2.0 screens are used here. Screens for other versions may vary.

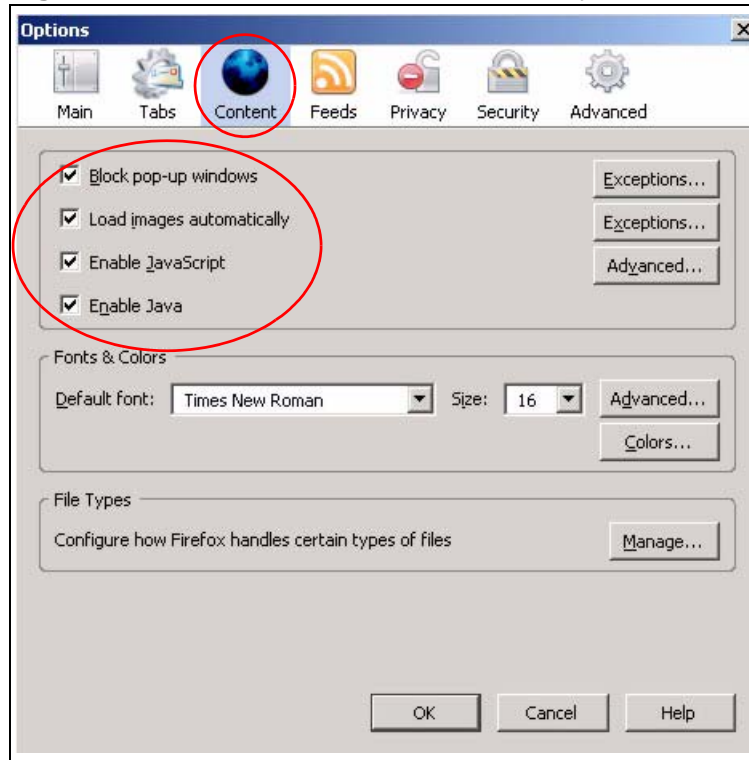
You can enable Java, Javascripts and pop-ups in one screen. Click **Tools**, then click **Options** in the screen that appears.

Figure 208 Mozilla Firefox: Tools > Options



Click **Content** to show the screen below. Select the check boxes as shown in the following screen.

Figure 209 Mozilla Firefox Content Security



Common Services

The following table lists some commonly-used services and their associated protocols and port numbers. For a comprehensive list of port numbers, ICMP type/code numbers and services, visit the IANA (Internet Assigned Number Authority) web site.

- **Name:** This is a short, descriptive name for the service. You can use this one or create a different one, if you like.
- **Protocol:** This is the type of IP protocol used by the service. If this is **TCP/UDP**, then the service uses the same port number with TCP and UDP. If this is **USER-DEFINED**, the **Port(s)** is the IP protocol number, not the port number.
- **Port(s):** This value depends on the **Protocol**. Please refer to RFC 1700 for further information about port numbers.
 - If the **Protocol** is **TCP, UDP, or TCP/UDP**, this is the IP port number.
 - If the **Protocol** is **USER**, this is the IP protocol number.
- **Description:** This is a brief explanation of the applications that use this service or the situations in which this service is used.

Table 124 Commonly Used Services

NAME	PROTOCOL	PORT(S)	DESCRIPTION
AH (IPSEC_TUNNEL)	User-Defined	51	The IPSEC AH (Authentication Header) tunneling protocol uses this service.
AIM/New-ICQ	TCP	5190	AOL's Internet Messenger service. It is also used as a listening port by ICQ.
AUTH	TCP	113	Authentication protocol used by some servers.
BGP	TCP	179	Border Gateway Protocol.
BOOTP_CLIENT	UDP	68	DHCP Client.
BOOTP_SERVER	UDP	67	DHCP Server.
CU-SEEME	TCP UDP	7648 24032	A popular videoconferencing solution from White Pines Software.
DNS	TCP/UDP	53	Domain Name Server, a service that matches web names (for example www.zyxel.com) to IP numbers.

Table 124 Commonly Used Services (continued)

NAME	PROTOCOL	PORT(S)	DESCRIPTION
ESP (IPSEC_TUNNEL)	User-Defined	50	The IPSEC ESP (Encapsulation Security Protocol) tunneling protocol uses this service.
FINGER	TCP	79	Finger is a UNIX or Internet related command that can be used to find out if a user is logged on.
FTP	TCP TCP	20 21	File Transfer Program, a program to enable fast transfer of files, including large files that may not be possible by e-mail.
H.323	TCP	1720	NetMeeting uses this protocol.
HTTP	TCP	80	Hyper Text Transfer Protocol - a client/server protocol for the world wide web.
HTTPS	TCP	443	HTTPS is a secured http session often used in e-commerce.
ICMP	User-Defined	1	Internet Control Message Protocol is often used for diagnostic or routing purposes.
ICQ	UDP	4000	This is a popular Internet chat program.
IGMP (MULTICAST)	User-Defined	2	Internet Group Management Protocol is used when sending packets to a specific group of hosts.
IKE	UDP	500	The Internet Key Exchange algorithm is used for key distribution and management.
IRC	TCP/UDP	6667	This is another popular Internet chat program.
MSN Messenger	TCP	1863	Microsoft Networks' messenger service uses this protocol.
NEW-ICQ	TCP	5190	An Internet chat program.
NEWS	TCP	144	A protocol for news groups.
NFS	UDP	2049	Network File System - NFS is a client/server distributed file service that provides transparent file sharing for network environments.
NNTP	TCP	119	Network News Transport Protocol is the delivery mechanism for the USENET newsgroup service.
PING	User-Defined	1	Packet INTERNet Groper is a protocol that sends out ICMP echo requests to test whether or not a remote host is reachable.
POP3	TCP	110	Post Office Protocol version 3 lets a client computer get e-mail from a POP3 server through a temporary connection (TCP/IP or other).

Table 124 Commonly Used Services (continued)

NAME	PROTOCOL	PORT(S)	DESCRIPTION
PPTP	TCP	1723	Point-to-Point Tunneling Protocol enables secure transfer of data over public networks. This is the control channel.
PPTP_TUNNEL (GRE)	User-Defined	47	PPTP (Point-to-Point Tunneling Protocol) enables secure transfer of data over public networks. This is the data channel.
RCMD	TCP	512	Remote Command Service.
REAL_AUDIO	TCP	7070	A streaming audio service that enables real time sound over the web.
REXEC	TCP	514	Remote Execution Daemon.
RLOGIN	TCP	513	Remote Login.
RTELNET	TCP	107	Remote Telnet.
RTSP	TCP/UDP	554	The Real Time Streaming (media control) Protocol (RTSP) is a remote control for multimedia on the Internet.
SFTP	TCP	115	Simple File Transfer Protocol.
SMTP	TCP	25	Simple Mail Transfer Protocol is the message-exchange standard for the Internet. SMTP enables you to move messages from one e-mail server to another.
SNMP	TCP/UDP	161	Simple Network Management Protocol.
SNMP-TRAPS	TCP/UDP	162	Traps for use with the SNMP (RFC: 1215).
SQL-NET	TCP	1521	Structured Query Language is an interface to access data on many different types of database systems, including mainframes, midrange systems, UNIX systems and network servers.
SSH	TCP/UDP	22	Secure Shell Remote Login Program.
STRM WORKS	UDP	1558	Stream Works Protocol.
SYSLOG	UDP	514	Syslog allows you to send system logs to a UNIX server.
TACACS	UDP	49	Login Host Protocol used for (Terminal Access Controller Access Control System).
TELNET	TCP	23	Telnet is the login and terminal emulation protocol common on the Internet and in UNIX environments. It operates over TCP/IP networks. Its primary function is to allow users to log into remote host systems.

Table 124 Commonly Used Services (continued)


NAME	PROTOCOL	PORT(S)	DESCRIPTION
TFTP	UDP	69	Trivial File Transfer Protocol is an Internet file transfer protocol similar to FTP, but uses the UDP (User Datagram Protocol) rather than TCP (Transmission Control Protocol).
VDOLIVE	TCP	7000	Another videoconferencing solution.

Importing Certificates

This appendix shows you how to import public key certificates into your web browser.

Public key certificates are used by web browsers to ensure that a secure web site is legitimate. When a certificate authority such as VeriSign, Comodo, or Network Solutions, to name a few, receives a certificate request from a website operator, they confirm that the web domain and contact information in the request match those on public record with a domain name registrar. If they match, then the certificate is issued to the website operator, who then places it on the site to be issued to all visiting web browsers to let them know that the site is legitimate.

Many ZyXEL products, such as the NSA-2401, issue their own public key certificates. These can be used by web browsers on a LAN or WAN to verify that they are in fact connecting to the legitimate device and not one masquerading as it. However, because the certificates were not issued by one of the several organizations officially recognized by the most common web browsers, you will need to import the ZyXEL-created certificate into your web browser and flag that certificate as a trusted authority.

Note: You can see if you are browsing on a secure website if the URL in your web browser's address bar begins with `https://` or there is a sealed padlock icon () somewhere in the main browser window (not all browsers show the padlock in the same location.)

In this appendix, you can import a public key certificate for:

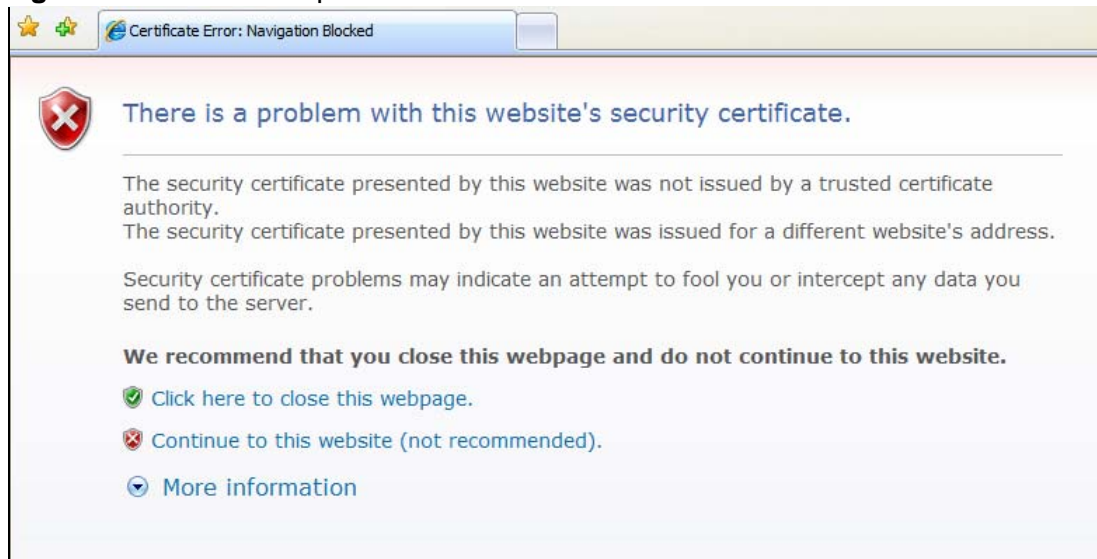
- Internet Explorer on [page 412](#)
- Firefox on [page 422](#)
- Opera on [page 428](#)
- Konqueror on [page 436](#)

Internet Explorer

The following example uses Microsoft Internet Explorer 7 on Windows XP Professional; however, they can also apply to Internet Explorer on Windows Vista.

- 1 If your device's Web Configurator is set to use SSL certification, then the first time you browse to it you are presented with a certification error.

Figure 210 Internet Explorer 7: Certification Error



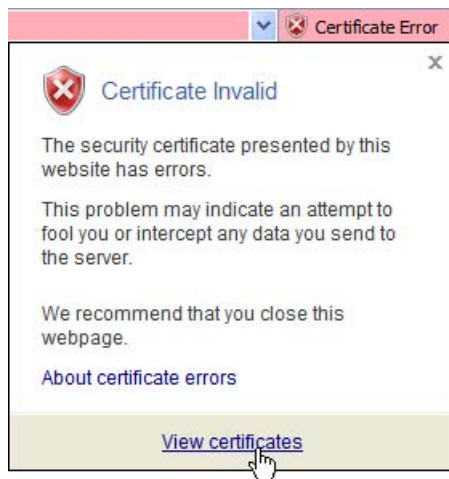
- 2 Click **Continue to this website (not recommended)**.

Figure 211 Internet Explorer 7: Certification Error



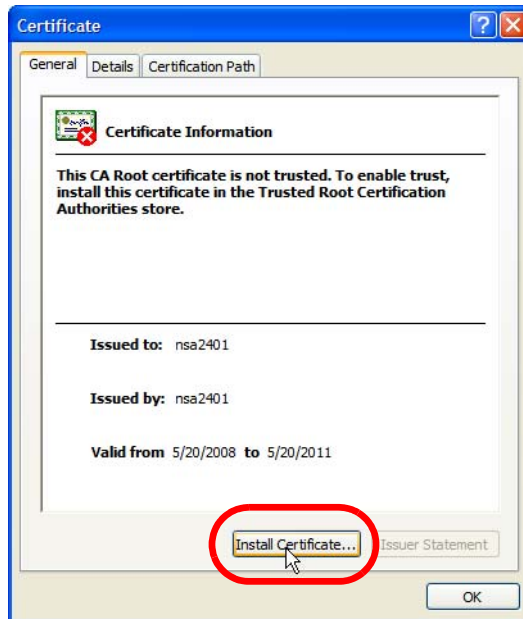
- 3 In the **Address Bar**, click **Certificate Error** > **View certificates**.

Figure 212 Internet Explorer 7: Certificate Error



- 4 In the **Certificate** dialog box, click **Install Certificate**.

Figure 213 Internet Explorer 7: Certificate



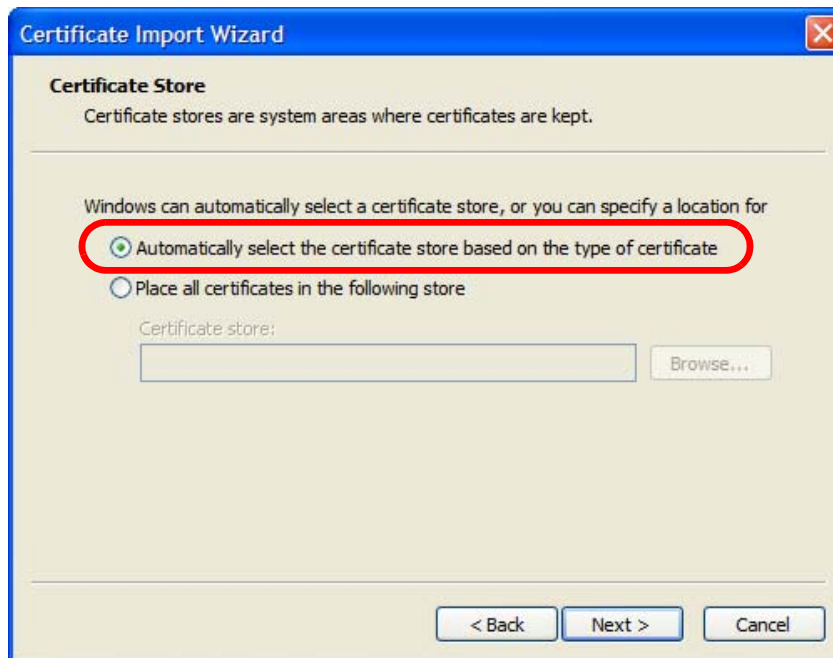
- 5 In the **Certificate Import Wizard**, click **Next**.

Figure 214 Internet Explorer 7: Certificate Import Wizard



- 6 If you want Internet Explorer to **Automatically select certificate store based on the type of certificate**, click **Next** again and then go to step 9.

Figure 215 Internet Explorer 7: Certificate Import Wizard



- 7 Otherwise, select **Place all certificates in the following store** and then click **Browse**.

Figure 216 Internet Explorer 7: Certificate Import Wizard



- 8 In the **Select Certificate Store** dialog box, choose a location in which to save the certificate and then click **OK**.

Figure 217 Internet Explorer 7: Select Certificate Store



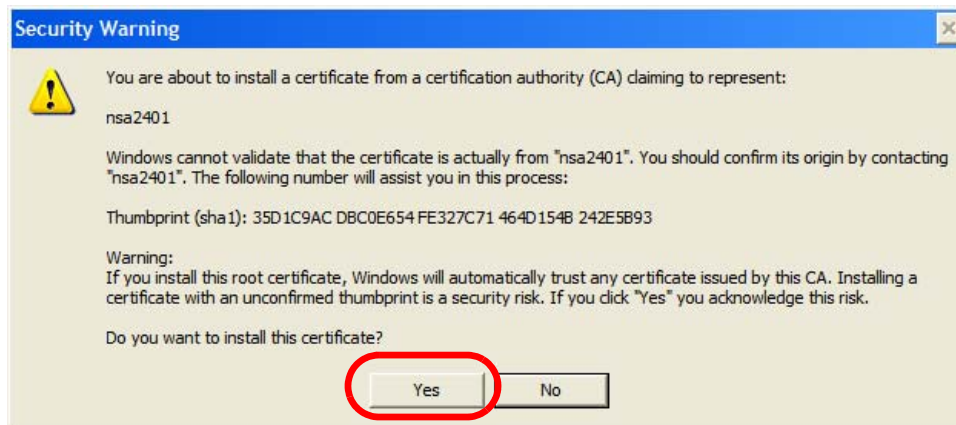
- 9 In the **Completing the Certificate Import Wizard** screen, click **Finish**.

Figure 218 Internet Explorer 7: Certificate Import Wizard



- 10 If you are presented with another **Security Warning**, click **Yes**.

Figure 219 Internet Explorer 7: Security Warning



- 11 Finally, click **OK** when presented with the successful certificate installation message.

Figure 220 Internet Explorer 7: Certificate Import Wizard



- 12 The next time you start Internet Explorer and go to a ZyXEL Web Configurator page, a sealed padlock icon appears in the address bar. Click it to view the page's **Website Identification** information.

Figure 221 Internet Explorer 7: Website Identification



Installing a Stand-Alone Certificate File in Internet Explorer

Rather than browsing to a ZyXEL Web Configurator and installing a public key certificate when prompted, you can install a stand-alone certificate file if one has been issued to you.

- 1 Double-click the public key certificate file.

Figure 222 Internet Explorer 7: Public Key Certificate File



- 2 In the security warning dialog box, click **Open**.

Figure 223 Internet Explorer 7: Open File - Security Warning



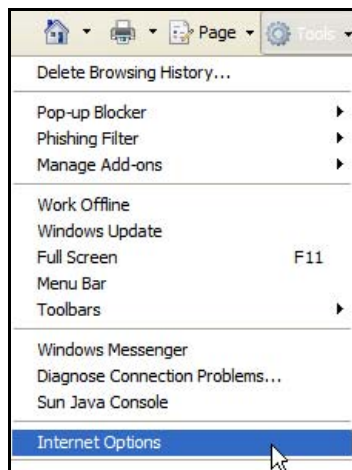
- 3 Refer to steps 4-12 in the Internet Explorer procedure beginning on [page 412](#) to complete the installation process.

Removing a Certificate in Internet Explorer

This section shows you how to remove a public key certificate in Internet Explorer 7.

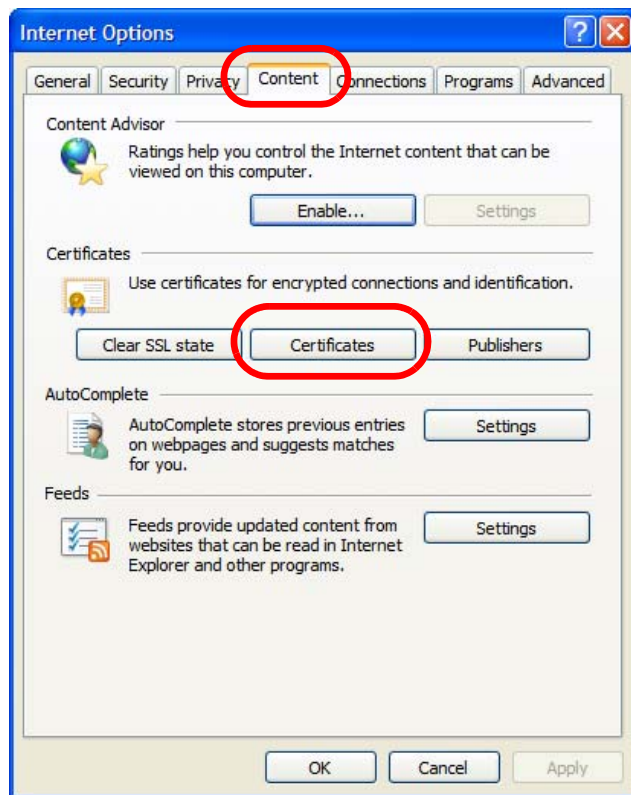
- 1 Open **Internet Explorer** and click **Tools > Internet Options**.

Figure 224 Internet Explorer 7: Tools Menu



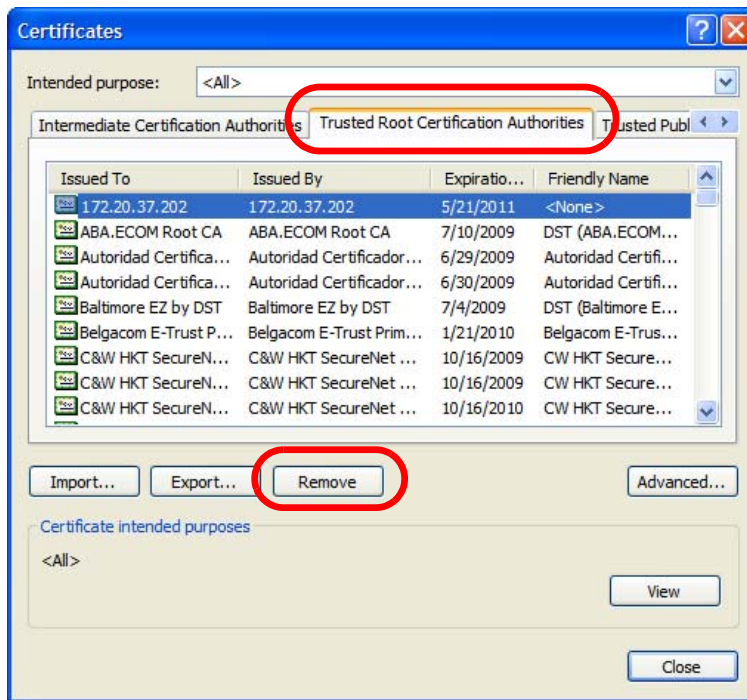
- 2 In the **Internet Options** dialog box, click **Content > Certificates**.

Figure 225 Internet Explorer 7: Internet Options



- In the **Certificates** dialog box, click the **Trusted Root Certificates Authorities** tab, select the certificate that you want to delete, and then click **Remove**.

Figure 226 Internet Explorer 7: Certificates



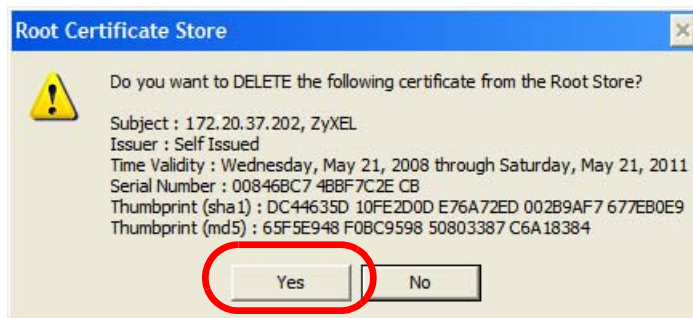
- In the **Certificates** confirmation, click **Yes**.

Figure 227 Internet Explorer 7: Certificates



- In the **Root Certificate Store** dialog box, click **Yes**.

Figure 228 Internet Explorer 7: Root Certificate Store



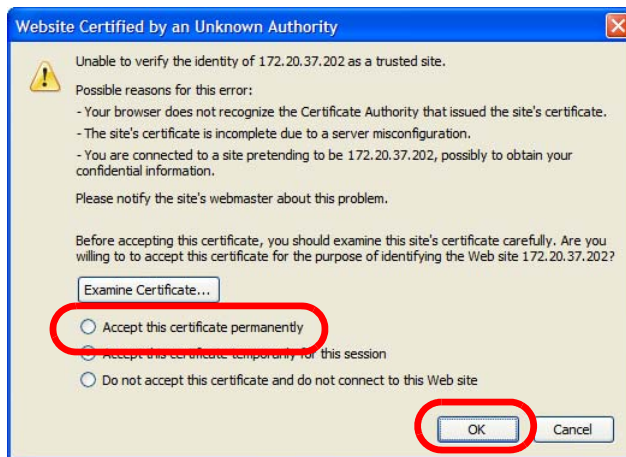
- 6 The next time you go to the web site that issued the public key certificate you just removed, a certification error appears.

Firefox

The following example uses Mozilla Firefox 2 on Windows XP Professional; however, the screens can also apply to Firefox 2 on all platforms.

- 1 If your device's Web Configurator is set to use SSL certification, then the first time you browse to it you are presented with a certification error.
- 2 Select **Accept this certificate permanently** and click **OK**.

Figure 229 Firefox 2: Website Certified by an Unknown Authority



- 3 The certificate is stored and you can now connect securely to the Web Configurator. A sealed padlock appears in the address bar, which you can click to open the **Page Info > Security** window to view the web page's security information.

Figure 230 Firefox 2: Page Info

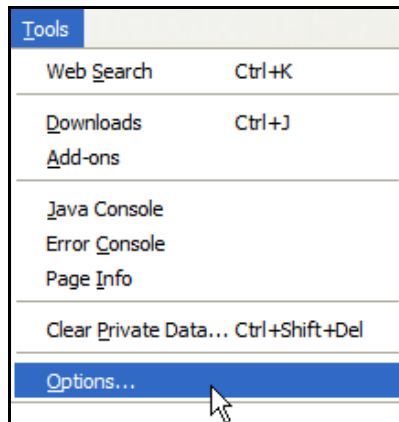


Installing a Stand-Alone Certificate File in Firefox

Rather than browsing to a ZyXEL Web Configurator and installing a public key certificate when prompted, you can install a stand-alone certificate file if one has been issued to you.

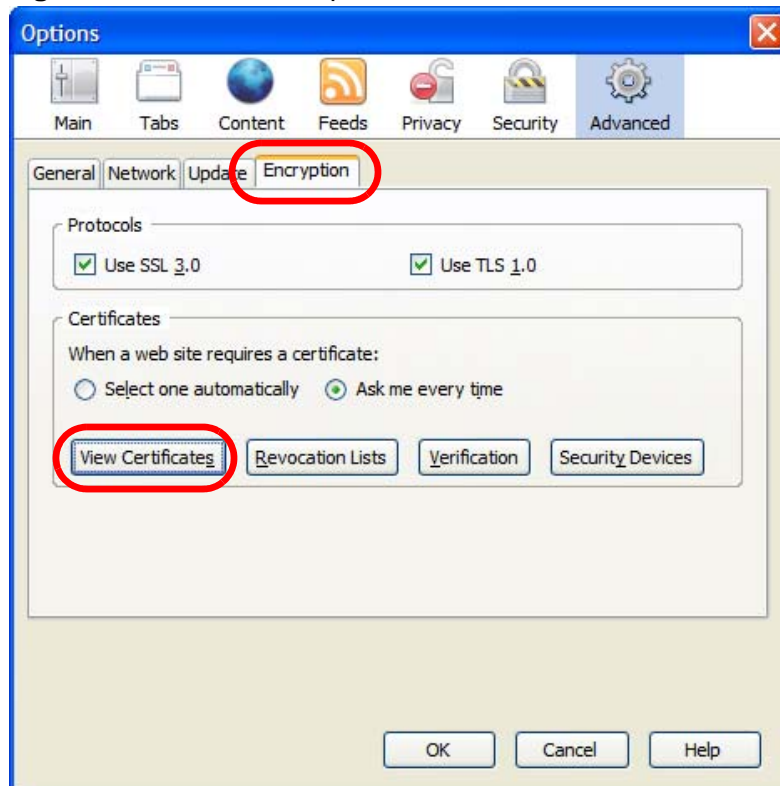
- 1 Open **Firefox** and click **Tools > Options**.

Figure 231 Firefox 2: Tools Menu



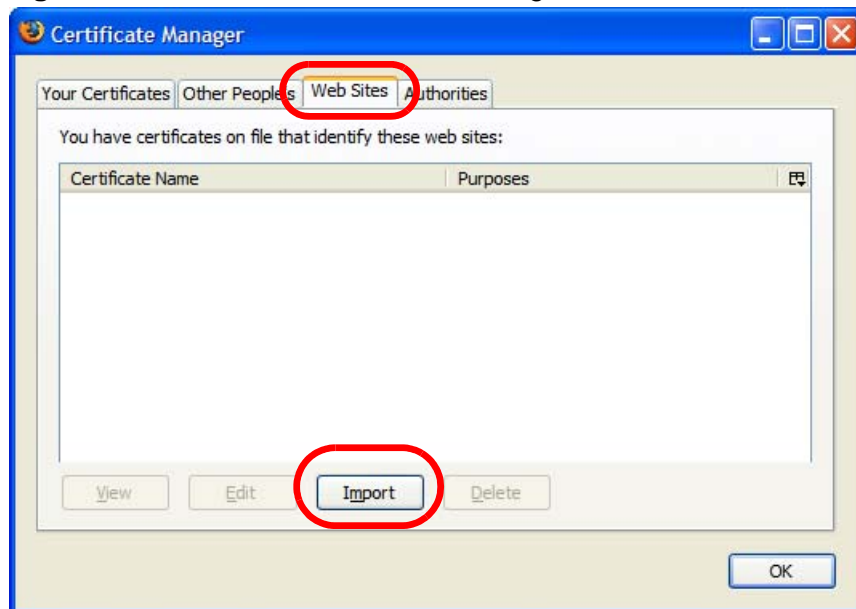
- 2 In the **Options** dialog box, click **Advanced > Encryption > View Certificates**.

Figure 232 Firefox 2: Options



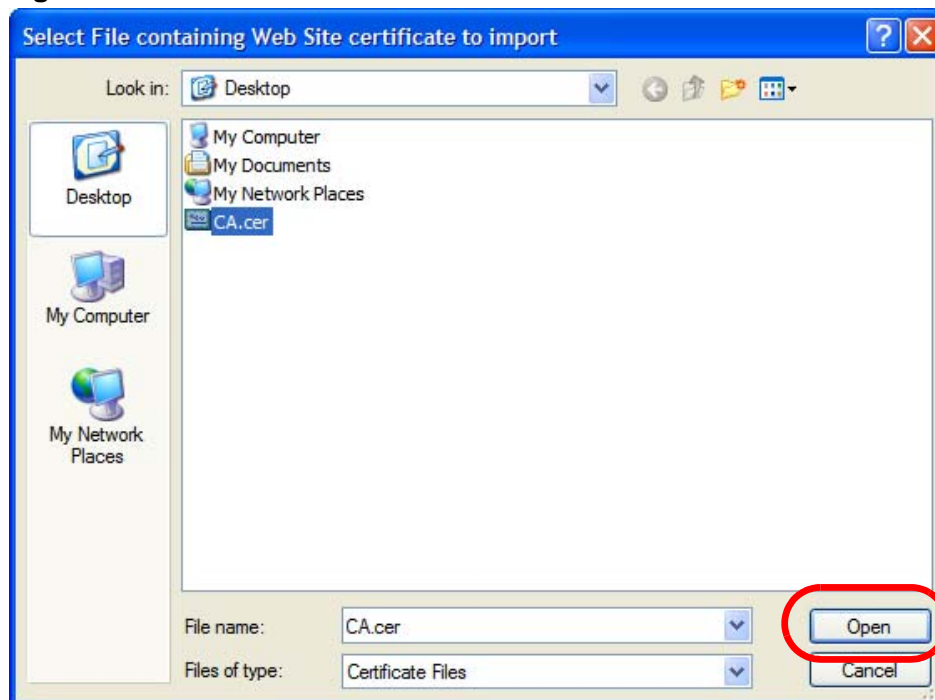
- 3 In the **Certificate Manager** dialog box, click **Web Sites** > **Import**.

Figure 233 Firefox 2: Certificate Manager



- 4 Use the **Select File** dialog box to locate the certificate and then click **Open**.

Figure 234 Firefox 2: Select File



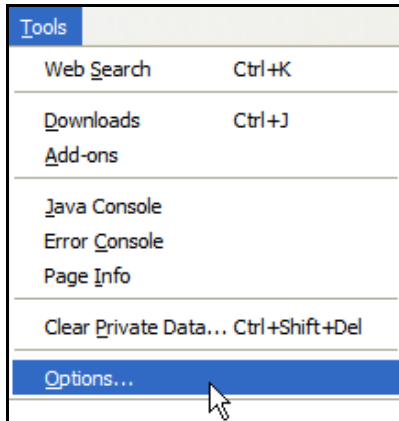
- 5 The next time you visit the web site, click the padlock in the address bar to open the **Page Info** > **Security** window to see the web page's security information.

Removing a Certificate in Firefox

This section shows you how to remove a public key certificate in Firefox 2.

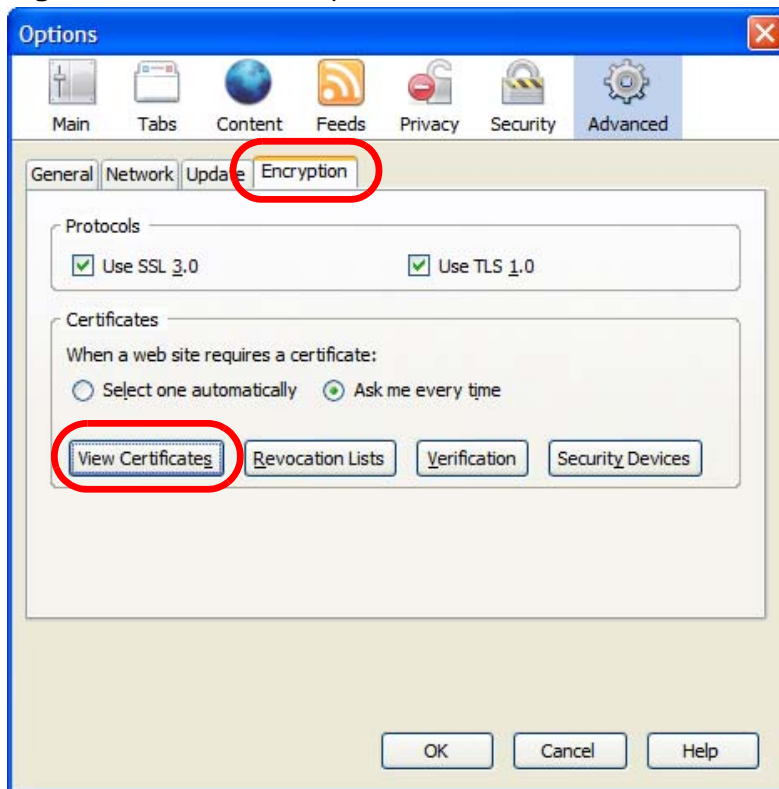
- 1 Open **Firefox** and click **Tools** > **Options**.

Figure 235 Firefox 2: Tools Menu



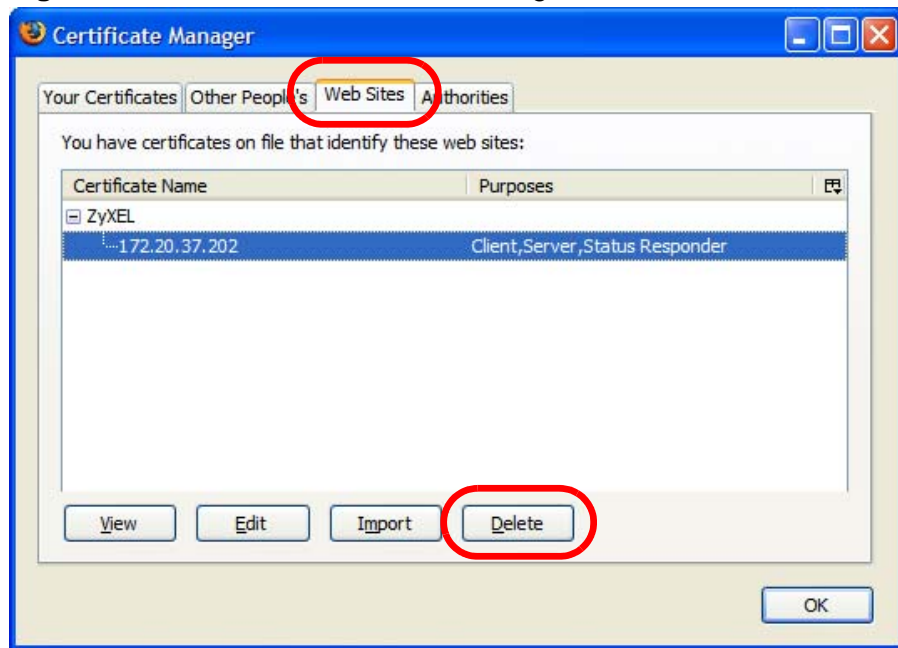
- 2 In the **Options** dialog box, click **Advanced** > **Encryption** > **View Certificates**.

Figure 236 Firefox 2: Options



- 3 In the **Certificate Manager** dialog box, select the **Web Sites** tab, select the certificate that you want to remove, and then click **Delete**.

Figure 237 Firefox 2: Certificate Manager



- 4 In the **Delete Web Site Certificates** dialog box, click **OK**.

Figure 238 Firefox 2: Delete Web Site Certificates



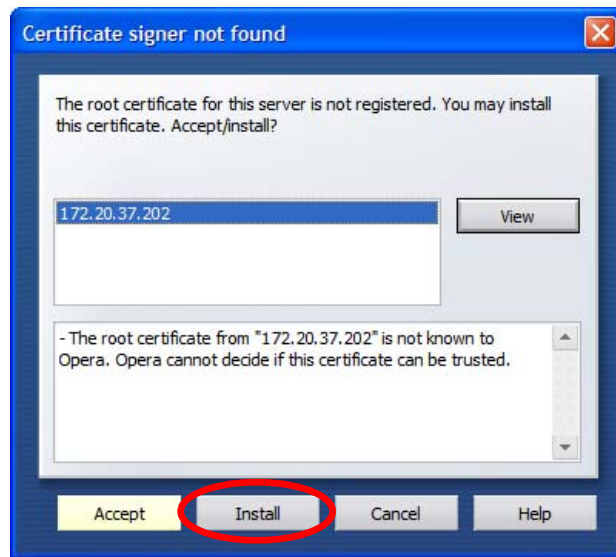
- 5 The next time you go to the web site that issued the public key certificate you just removed, a certification error appears.

Opera

The following example uses Opera 9 on Windows XP Professional; however, the screens can apply to Opera 9 on all platforms.

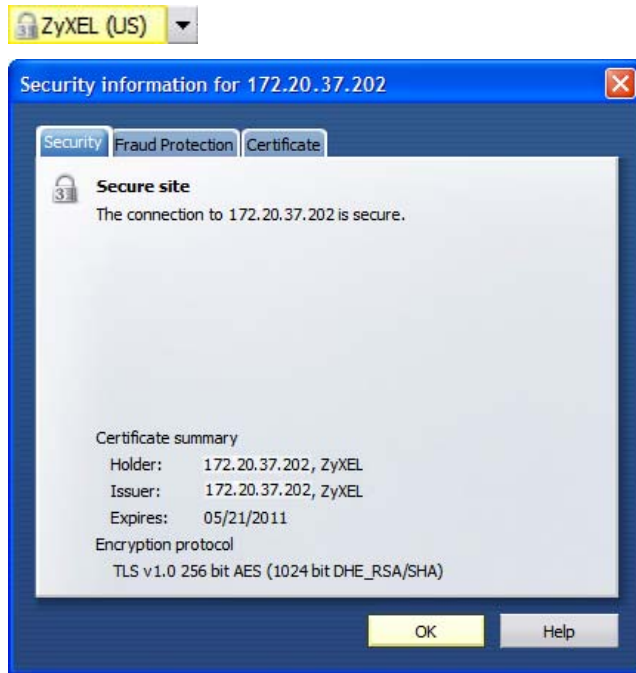
- 1 If your device's Web Configurator is set to use SSL certification, then the first time you browse to it you are presented with a certification error.
- 2 Click **Install** to accept the certificate.

Figure 239 Opera 9: Certificate signer not found



- 3 The next time you visit the web site, click the padlock in the address bar to open the **Security information** window to view the web page's security details.

Figure 240 Opera 9: Security information

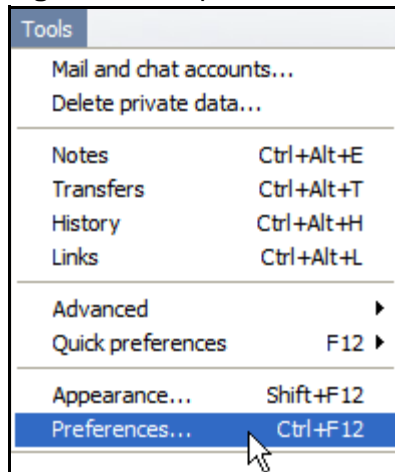


Installing a Stand-Alone Certificate File in Opera

Rather than browsing to a ZyXEL Web Configurator and installing a public key certificate when prompted, you can install a stand-alone certificate file if one has been issued to you.

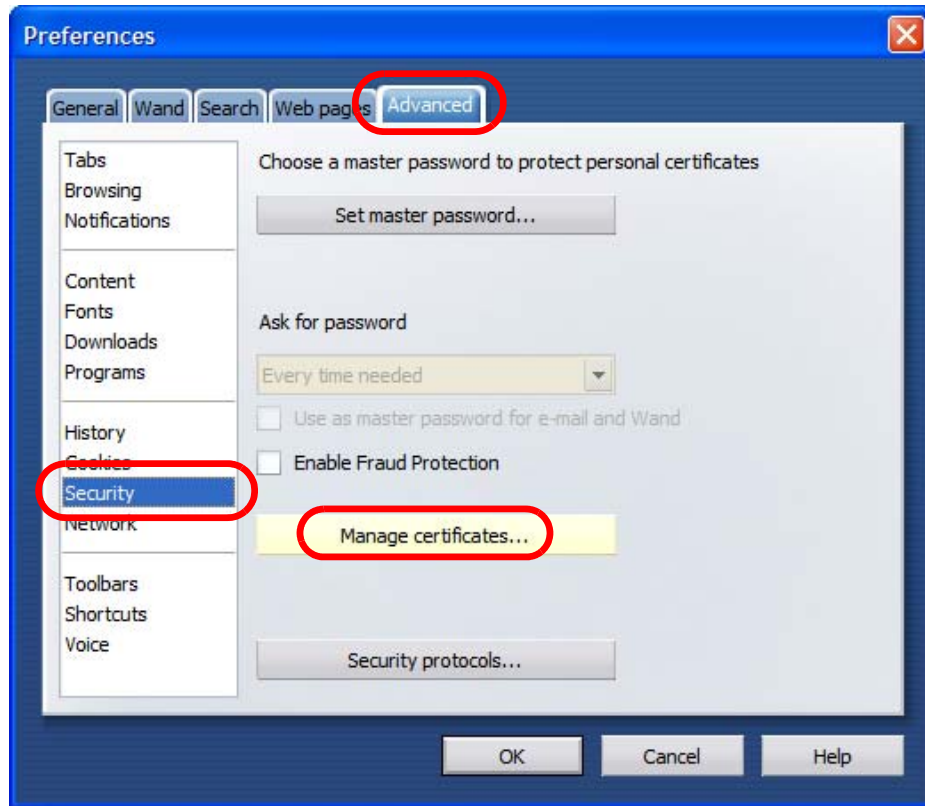
- 1 Open **Opera** and click **Tools > Preferences**.

Figure 241 Opera 9: Tools Menu



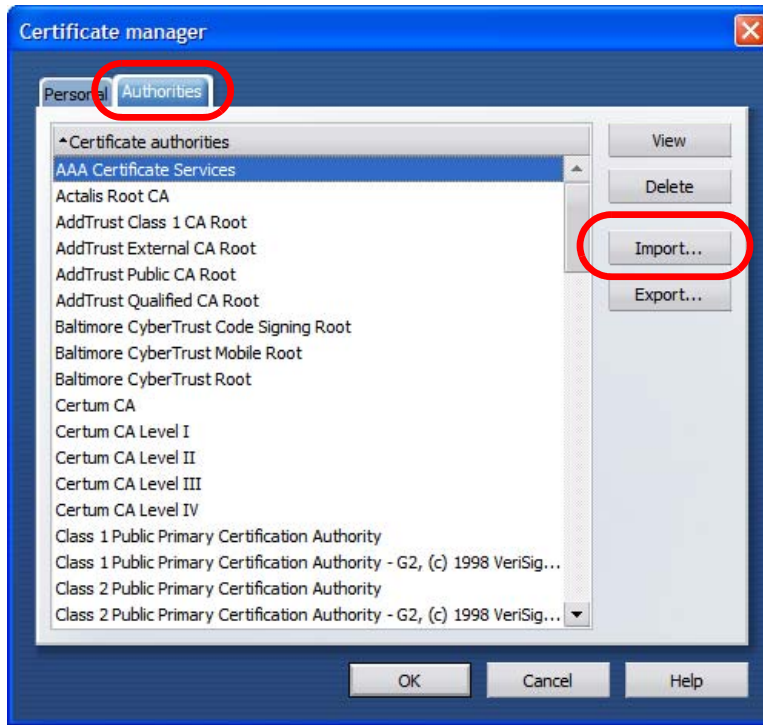
- 2 In **Preferences**, click **Advanced** > **Security** > **Manage certificates**.

Figure 242 Opera 9: Preferences



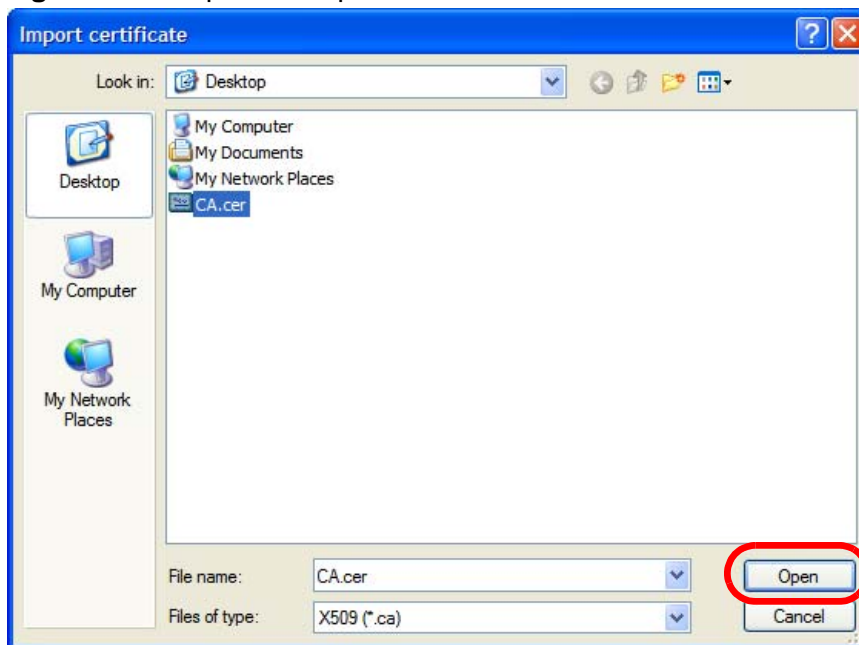
- 3 In the **Certificates Manager**, click **Authorities > Import**.

Figure 243 Opera 9: Certificate manager



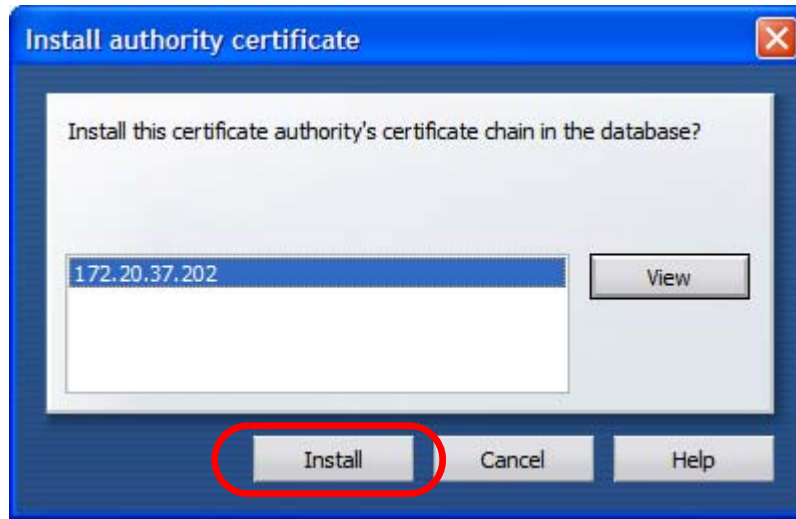
- 4 Use the **Import certificate** dialog box to locate the certificate and then click **Open**.

Figure 244 Opera 9: Import certificate



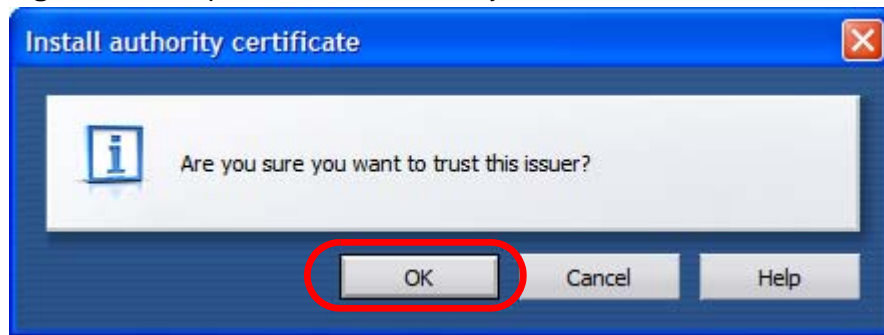
- 5 In the **Install authority certificate** dialog box, click **Install**.

Figure 245 Opera 9: Install authority certificate



- 6 Next, click **OK**.

Figure 246 Opera 9: Install authority certificate



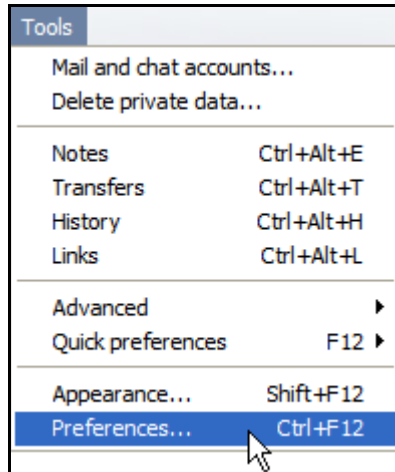
- 7 The next time you visit the web site, click the padlock in the address bar to open the **Security information** window to view the web page's security details.

Removing a Certificate in Opera

This section shows you how to remove a public key certificate in Opera 9.

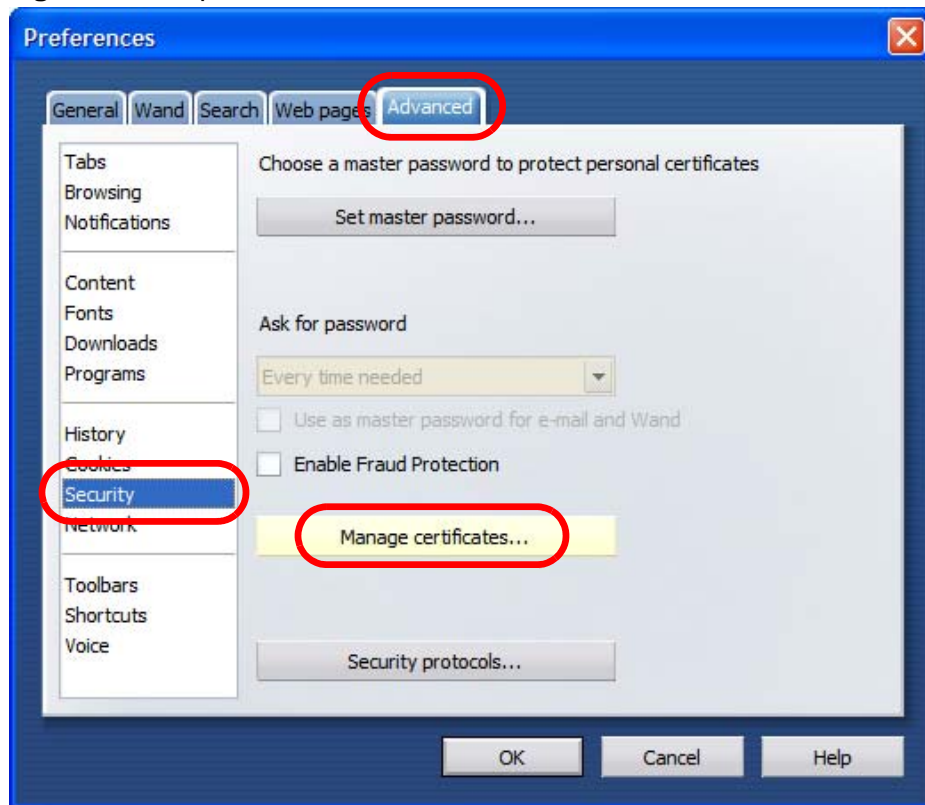
- 1 Open **Opera** and click **Tools > Preferences**.

Figure 247 Opera 9: Tools Menu



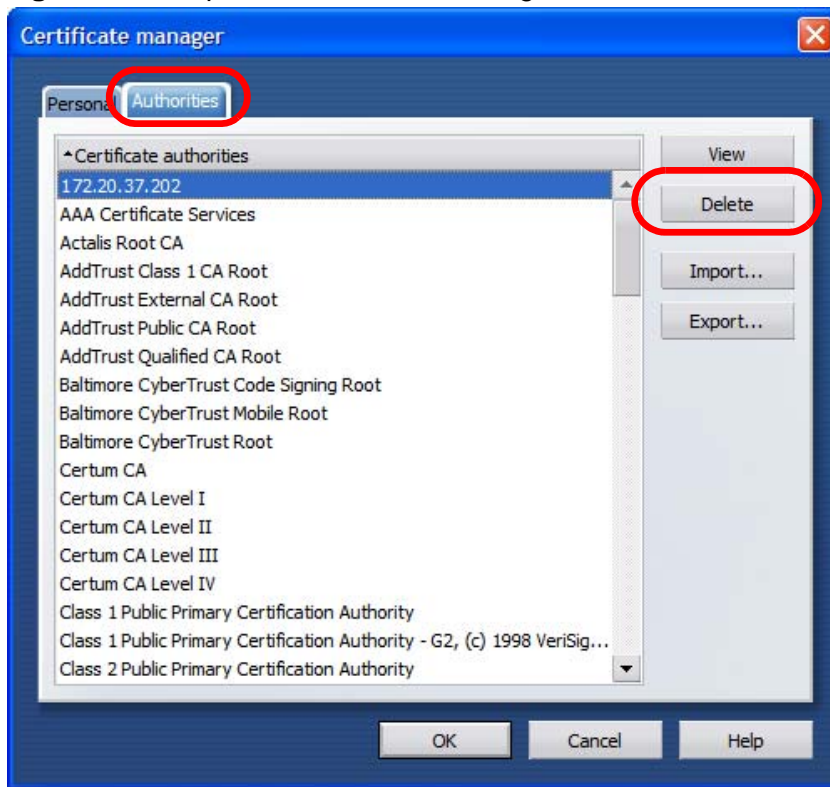
- 2 In **Preferences**, **Advanced > Security > Manage certificates**.

Figure 248 Opera 9: Preferences



- 3 In the **Certificates manager**, select the **Authorities** tab, select the certificate that you want to remove, and then click **Delete**.

Figure 249 Opera 9: Certificate manager



- 4 The next time you go to the web site that issued the public key certificate you just removed, a certification error appears.

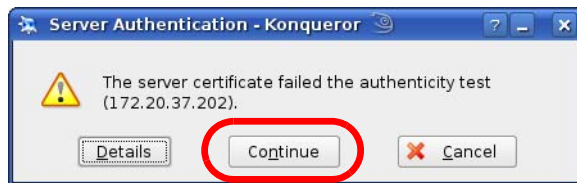
Note: There is no confirmation when you delete a certificate authority, so be absolutely certain that you want to go through with it before clicking the button.

Konqueror

The following example uses Konqueror 3.5 on openSUSE 10.3, however the screens apply to Konqueror 3.5 on all Linux KDE distributions.

- 1 If your device's Web Configurator is set to use SSL certification, then the first time you browse to it you are presented with a certification error.
- 2 Click **Continue**.

Figure 250 Konqueror 3.5: Server Authentication



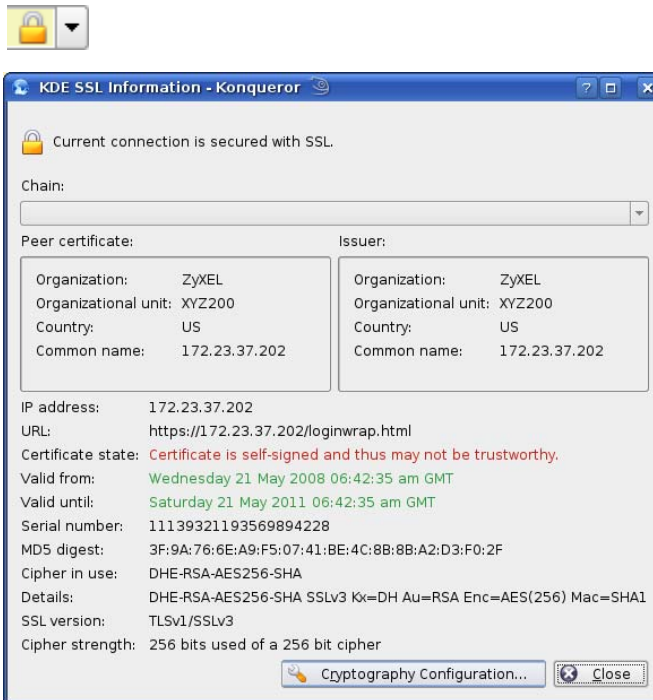
- 3 Click **Forever** when prompted to accept the certificate.

Figure 251 Konqueror 3.5: Server Authentication



- 4 Click the padlock in the address bar to open the **KDE SSL Information** window and view the web page's security details.

Figure 252 Konqueror 3.5: KDE SSL Information



Installing a Stand-Alone Certificate File in Konqueror

Rather than browsing to a ZyXEL Web Configurator and installing a public key certificate when prompted, you can install a stand-alone certificate file if one has been issued to you.

- 1 Double-click the public key certificate file.

Figure 253 Konqueror 3.5: Public Key Certificate File



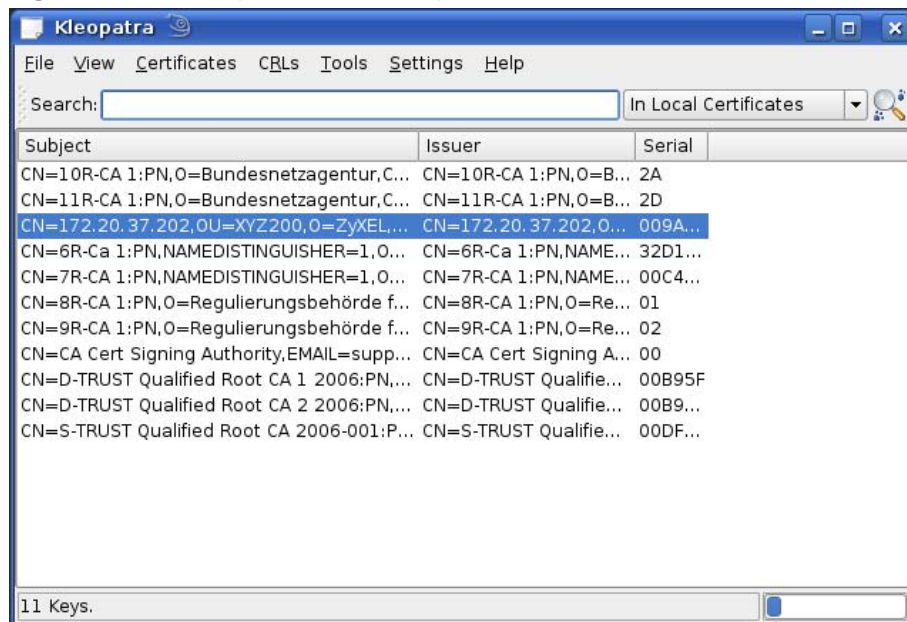
- 2 In the **Certificate Import Result - Kleopatra** dialog box, click **OK**.

Figure 254 Konqueror 3.5: Certificate Import Result



The public key certificate appears in the KDE certificate manager, **Kleopatra**.

Figure 255 Konqueror 3.5: Kleopatra



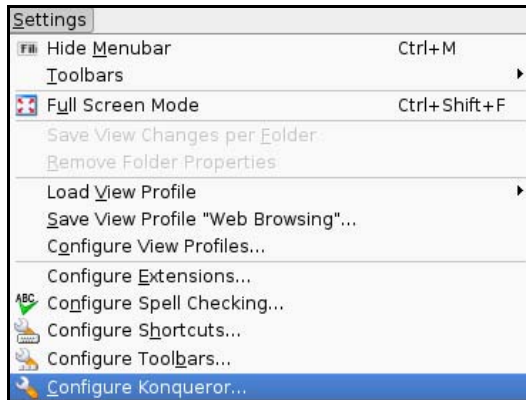
- 3 The next time you visit the web site, click the padlock in the address bar to open the **KDE SSL Information** window to view the web page's security details.

Removing a Certificate in Konqueror

This section shows you how to remove a public key certificate in Konqueror 3.5.

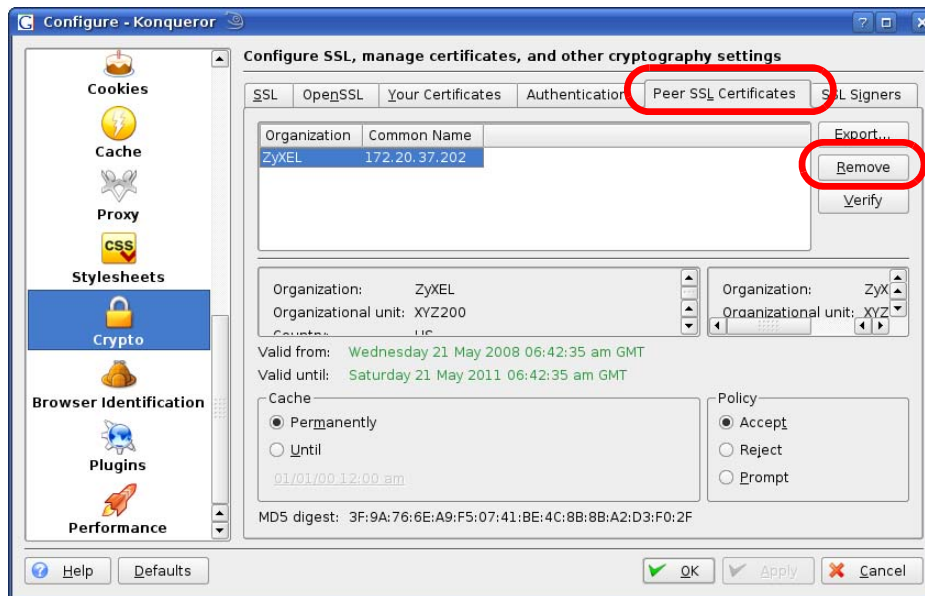
- 1 Open **Konqueror** and click **Settings > Configure Konqueror**.

Figure 256 Konqueror 3.5: Settings Menu



- 2 In the **Configure** dialog box, select **Crypto**.
- 3 On the **Peer SSL Certificates** tab, select the certificate you want to delete and then click **Remove**.

Figure 257 Konqueror 3.5: Configure



- 4 The next time you go to the web site that issued the public key certificate you just removed, a certification error appears.

Note: There is no confirmation when you remove a certificate authority, so be absolutely certain you want to go through with it before clicking the button.

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Version 3, 29 June 2007

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BOOST SOFTWARE LICENSE

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INTRODUCTION

The Boost Software License specifies the terms and conditions of use for those Boost libraries that it covers.

Currently, some Boost libraries have their own licenses. The hope is that eventually all Boost libraries will be covered by the Boost Software License. In the meantime, all libraries comply with the Boost License requirements.

HISTORY

As Boost grew, it became unmanageable for each Boost file to have its own license. Users complained that each license needed to be reviewed, and that reviews were difficult or impossible if Boost libraries contained many different licenses. Boost moderators and maintainers spent excessive time dealing with license issues. Boost developers often copied existing licenses without actually knowing if the license wording met legal needs.

To clarify these licensing issues, the Boost moderators asked for help from the Berkman Center for Internet & Society at Harvard Law School, Cambridge, Massachusetts, USA. It was requested that a single Boost license be developed that met the traditional requirements that Boost licenses, particularly:

- o Must be simple to read and understand.
- o Must grant permission without fee to copy, use and modify the software for any use (commercial and non-commercial).
- o Must require that the license appear with all copies [including redistributions] of the software source code.
- o Must not require that the license appear with executables or other binary uses of the library.
- o Must not require that the source code be available for execution or other binary uses of the library.

Additionally, other common open source licenses were studied to see what additional issues were being treated, and additions representing good legal practice were also requested. The result is the Boost Software License:

Boost Software License - Version 1.0 - August 17th, 2003

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RATIONALE

The following rationale was provided by Devin Smith, the lawyer who wrote the Boost Software License. It has been edited slightly for brevity. Editorial additions are shown in square brackets.

BENEFIT OF COMMON SOFTWARE LICENSE

If one of Boost's goals is to ease use and adoption of the various libraries made available by Boost, it does make sense to try to standardize the licenses under which the libraries are made available to users. (I make some recommendations about a possible short-form license below.)

[Standardizing the license will not] necessarily address the issue of satisfying corporate licensees. Each corporation will have its own concerns, based on their own experiences with software licensing and distribution and, if they're careful,

will want to carefully review each license, even if they've been told that they're all standard. I would expect that, unless we're remarkably brilliant (or lucky) in drafting the standard Boost license, the standard license won't satisfy the legal departments of all corporations. I imagine that some will, for instance, absolutely insist that licensors provide a warranty of title and provide indemnification for third-party intellectual property infringement claims. Others may want functional warranties. (If I were advising the corporations, I would point out that they're not paying anything for the code and getting such warranties from individual programmers, who probably do not have deep pockets, is not that valuable anyway, but other lawyers may disagree.)

But this can be addressed, not by trying to craft the perfect standard license, but by informing the corporations that they can, if they don't like the standard license, approach the authors to negotiate a different, perhaps even paid, license.

One other benefit of adopting a standard license is to help ensure that the license accomplishes, from a legal perspective, what the authors intend. For instance, many of the [original] licenses for the libraries available on boost.org do not disclaim the warranty of title, meaning that the authors could, arguably, be sued by a user if the code infringes the rights of a third party and the user is sued by that third party. I think the authors probably want to disclaim this kind of liability.

SHORT-FORM LICENSE

Without in anyway detracting from the draft license that's been circulated [to Boost moderators], I'd like to propose an alternative "short-form" license that Boost could have the library authors adopt. David [Abrahams] has expressed a desire to keep things as simple as possible, and to try to move away from past practice as little as possible, and this is my attempt at a draft.

This license, which is very similar to the BSD license and the MIT license, should satisfy the Open Source Initiative's Open Source Definition: (i) the license permits free redistribution, (ii) the distributed code includes source code, (iii) the license permits the creation of derivative works, (iv) the license does not discriminate against persons or groups, (v) the license does not discriminate against fields of endeavor, (vi) the rights apply to all to whom the program is redistributed, (vii) the license is not specific to a product, and (viii) the license is technologically neutral (i.e., it does not [require] an explicit gesture of assent in order to establish a contract between licensor and licensee).

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FAQ

How should Boost programmers apply the license to source and header files? Add a comment based on the following template, substituting appropriate text for the italicized portion:

```
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// (See accompanying file LICENSE_1_0.txt or copy at  
  
//      http://www.boost.org/LICENSE\_1\_0.txt)
```

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Other ways of licensing source files have been considered, but some of them turned out to unintentionally nullify legal elements of the license. Having fixed language for referring to the license helps corporate legal departments evaluate the boost distribution. Creativity in license reference language is strongly discouraged, but judicious changes in the use of whitespace are fine.

How should the license be applied to documentation files, instead? Very similarly to the way it is applied to source files: the user should see the very same text indicated in the template above, with the only difference that both the local and the web copy of LICENSE_1_0.txt should be linked to. Refer to the HTML source code of this page in case of doubt.

Note that the location of the local LICENSE_1_0.txt needs to be indicated relatively to the position of your documentation file (../LICENSE_1_0.txt, ../../LICENSE_1_0.txt etc.)

How is the Boost license different from the GNU General Public License (GPL)? The Boost license permits the creation of derivative works for commercial or non-commercial use with no legal requirement to release your source code. Other differences include Boost not requiring reproduction of copyright messages for object code redistribution, and the fact that the Boost license is not "viral": if you distribute your own code along with some Boost code, the Boost license applies only to the Boost code (and modified versions thereof); you are free to license your own code under any terms you like. The GPL is also much longer, and thus may be harder to understand.

Why the phrase "machine-executable object code generated by a source language processor"? To distinguish cases where we do not require reproduction of the copyrights and license, such as object libraries, shared libraries, and final program executables, from cases where reproduction is still required, such as distribution of self-extracting archives of source code or precompiled header files. More

detailed wording was rejected as not being legally necessary, and reducing readability.

Why is the "disclaimer" paragraph of the license entirely in uppercase? Capitalization of these particular provisions is a US legal mandate for consumer protection. (Diane Cabell)

Does the copyright and license cover interfaces too? The conceptual interface to a library isn't covered. The particular representation expressed in the header is covered, as is the documentation, examples, test programs, and all the other material that goes with the library. A different implementation is free to use the same logical interface, however. Interface issues have been fought out in court several times; ask a lawyer for details.

Why doesn't the license prohibit the copyright holder from patenting the covered software? No one who distributes their code under the terms of this license could turn around and sue a user for patent infringement. (Devin Smith)

Boost's lawyers were well aware of patent provisions in licenses like the GPL and CPL, and would have included such provisions in the Boost license if they were believed to be legally useful.

Why doesn't the copyright message say "All rights reserved"? Devin Smith says "I don't think it belongs in the copyright notice for anything (software, electronic documentation, etc.) that is being licensed. It belongs in books that are sold where, in fact, all rights (e.g., to reproduce the book, etc.) are being reserved in the publisher or author. I think it shouldn't be in the BSD license."

Do I have to copyright/license trivial files? Even a test file that just contains an empty main() should have a copyright. Files without copyrights make corporate lawyers nervous, and that's a barrier to adoption. The more of Boost is uniformly copyrighted and licensed, the less problem people will have with mounting a Boost release CD on a corporate server.

Can I use the Boost license for my own projects outside Boost? Sure; there are no restrictions on the use of the license itself.

Is the Boost license "Open Source"? Yes. The Open Source Initiative certified the Boost Software License 1.0 in early 2008.



TRANSITION

To ease the transition of the code base towards the new common license, several people decided to give a blanket permission for all their contributions to use the new license. This hopefully helps maintainers to switch to the new license once the list contains enough names without asking over and over again for each change. Please consider adding your name to the list.

ACKNOWLEDGEMENTS

Dave Abrahams led the Boost effort to develop better licensing. The legal team was led by Diane Cabell, Director, Clinical Programs, Berkman Center for Internet & Society, Harvard Law School. Devin Smith, attorney, Nixon Peabody LLP, wrote the Boost License. Eva Chan, Harvard Law School, contributed analysis of Boost issues and drafts of various legal documents. Boost members reviewed drafts of the license. Beman Dawes wrote this web page.

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License Issues

Curl and libcurl are released under a MIT/X derivate license. The license is very liberal and should not impose a problem for your project. This section is just a brief summary for the cases we get the most questions. (Parts of this section was much enhanced by Bjorn Reese.)

We are not lawyers and this is not legal advice. You should probably consult one if you want true and accurate legal insights without our prejudice.

6.1 I have a GPL program, can I use the libcurl library?

Yes!

Since libcurl may be distributed under the MIT/X derivate license, it can be used together with GPL in any software.

6.2 I have a closed-source program, can I use the libcurl library?

Yes!

libcurl does not put any restrictions on the program that uses the library.

6.3 I have a BSD licensed program, can I use the libcurl library?

Yes!

libcurl does not put any restrictions on the program that uses the library.

6.4 I have a program that uses LGPL libraries, can I use libcurl?

Yes!

The LGPL license doesn't clash with other licenses.

6.5 Can I modify curl/libcurl for my program and keep the changes secret?

Yes!

The MIT/X derivate license practically allows you to do almost anything with the sources, on the condition that the copyright texts in the sources are left intact.

6.6 Can you please change the curl/libcurl license to XXXX?

No.

We have carefully picked this license after years of development and discussions and a large amount of people have contributed with source code knowing that this is the license we use. This license puts the restrictions we want on curl/libcurl and it does not spread to other programs or libraries that use it. It should be possible for everyone to use libcurl or curl in their projects, no matter what license they already have in use.

6.7 What are my obligations when using libcurl in my commercial apps?

Next to none. All you need to adhere to is the MIT-style license (stated in the COPYING file) which basically says you have to include the copyright notice in "all copies" and that you may not use the copyright holder's name when promoting your software.

You do not have to release any of your source code.

You do not have to reveal or make public any changes to the libcurl source

code.

You do not have to reveal or make public that you are using libcurl within your app.

As can be seen here: <http://curl.haxx.se/docs/companies.html> and elsewhere, more and more companies are discovering the power of libcurl and take advantage of it even in commercial environments.

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```
/  
*****  
*****  
  
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* National Center for Supercomputing Applications  
  
* University of Illinois at Urbana-Champaign  
  
* 605 E. Springfield, Champaign, IL 61820
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* md5.c: NCSA HTTPd code which uses the md5c.c RSA Code

*

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Written by: Philip Hazel <ph10@cam.ac.uk>

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Written by Adam Twiss (adam@zeus.co.uk). March 1996

Thanks to the following people for their input:

Mike Belshe (mbelshe@netscape.com)

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6. Karl Berry <karl@owl.HQ.ileaf.com> syslog to file option
7. Greg Brackley <greg.brackley@bigfoot.com> Major rework of WINNT port. Clean up recvbuf and iosignal code into separate modules.
8. Marc Brett <Marc.Brett@westgeo.com> Magnavox GPS clock driver
9. Piete Brooks <Piete.Brooks@cl.cam.ac.uk> MSF clock driver, Trimble PARSE support
10. Reg Clemens <reg@dwf.com> Oncore driver (Current maintainer)
11. Steve Clift <clift@ml.csiro.au> OMEGA clock driver
12. Casey Crellin <casey@csc.co.za> vxWorks (Tornado) port and help with target configuration
13. Sven Dietrich <sven_dietrich@trimble.com> Palisade reference clock driver, NT adj. residuals, integrated Greg's Winnt port.
14. John A. Dundas III <dundas@salt.jpl.nasa.gov> Apple A/UX port
15. Torsten Duwe <duwe@immd4.informatik.uni-erlangen.de> Linux port
16. Dennis Ferguson <dennis@mrbill.canet.ca> foundation code for NTP Version 2 as specified in RFC-1119
17. John Hay <jhay@icomtek.csiro.co.za> IPv6 support and testing
18. Dave Hart <davehart@davehart.com> General maintenance, Windows port interpolation rewrite.
19. Claas Hilbrecht <neoclock4x@linum.com> NeoClock4X clock driver

20. Glenn Hollinger <glenn@herald.usask.ca> GOES clock driver
21. Mike Iglesias <iglesias@uci.edu> DEC Alpha port
22. Jim Jagielski <jim@jagubox.gsfc.nasa.gov> A/UX port
23. Jeff Johnson <jbj@chatham.usdesign.com> massive prototyping overhaul
24. Hans Lambermont <Hans.Lambermont@nl.origin-it.com> or <H.Lambermont@chello.nl> ntpsweep
25. Poul-Henning Kamp <phk@FreeBSD.ORG> Oncore driver (Original author)
26. Frank Kardel <kardel (at) ntp (dot) org> PARSE <GENERIC> driver (>14 reference clocks), STREAMS modules for PARSE, support scripts, syslog cleanup, dynamic interface handling
27. William L. Jones <jones@hermes.chpc.utexas.edu> RS/6000 AIX modifications, HPUX modifications
28. Dave Katz <dkatz@cisco.com> RS/6000 AIX port
29. Craig Leres <leres@ee.lbl.gov> 4.4BSD port, ppsclock, Magnavox GPS clock driver
30. George Lindholm <lindholm@ucs.ubc.ca> SunOS 5.1 port
31. Louis A. Mamakos <louie@ni.umd.edu> MD5-based authentication
32. Lars H. Mathiesen <thorinn@diku.dk> adaptation of foundation code for Version 3 as specified in RFC-1305
33. Danny Mayer <mayer@ntp.org> Network I/O, Windows Port, Code Maintenance
34. David L. Mills <mills@udel.edu> Version 4 foundation: clock discipline, authentication, precision kernel; clock drivers: Spectracom, Austron, Arbiter, Heath, ATOM, ACTS, KSI/Odetics; audio clock drivers: CHU, WWV/H, IRIG
35. Wolfgang Moeller <moeller@gwdgv1.dnet.gwdg.de> VMS port
36. Jeffrey Mogul <mogul@pa.dec.com> ntptrace utility
37. Tom Moore <tmoore@fieval.daytonoh.ncr.com> i386 svr4 port
38. Kamal A Mostafa <kamal@whence.com> SCO OpenServer port
39. Derek Mulcahy <derek@toybox.demon.co.uk> and Damon Hart-Davis <d@hd.org> ARCRON MSF clock driver

- 40. Rob Neal <neal@ntp.org> Bancomm refclock and config/parse code maintenance
- 41. Rainer Pruy <Rainer.Pruy@informatik.uni-erlangen.de> monitoring/trap scripts, statistics file handling
- 42. Dirce Richards <dirce@zk3.dec.com> Digital UNIX V4.0 port
- 43. Wilfredo Sánchez <wsanchez@apple.com> added support for NetInfo
- 44. Nick Sayer <mrapple@quack.kfu.com> SunOS streams modules
- 45. Jack Sasportas <jack@innovativeinternet.com> Saved a Lot of space on the stuff in the html/pic/ subdirectory
- 46. Ray Schnitzler <schnitz@unipress.com> Unixware1 port
- 47. Michael Shields <shields@tembel.org> USNO clock driver
- 48. Jeff Steinman <jss@pebbles.jpl.nasa.gov> Datum PTS clock driver
- 49. Harlan Stenn <harlan@pfcs.com> GNU automake/autoconfigure makeover, various other bits (see the ChangeLog)
- 50. Kenneth Stone <ken@sdd.hp.com> HP-UX port
- 51. Ajit Thyagarajan <ajit@ee.udel.edu> IP multicast/anycast support
- 52. Tomoaki TSURUOKA <tsuruoka@nc.fukuoka-u.ac.jp> TRAK clock driver
- 53. Paul A Vixie <vixie@vix.com> TrueTime GPS driver, generic TrueTime clock driver
- 54. Ulrich Windl <Ulrich.Windl@rz.uni-regensburg.de> corrected and validated HTML documents according to the HTML DTD

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=====  
  
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