



# ReadyNAS RAIDiator 4.1

## Software Manual

### Models:

Duo  
NV+  
1100

350 East Plumeria Drive  
San Jose, CA 95134  
USA

November 2011  
202-10926-01

© 2011 NETGEAR, Inc. All rights reserved

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means without the written permission of NETGEAR, Inc.

## Technical Support

Thank you for choosing NETGEAR. To register your product, get the latest product updates, get support online, or for more information about the topics covered in this manual, visit the Support website at <http://support.netgear.com>.

Phone (US & Canada only): 1-888-NETGEAR

Phone (Other Countries): Check the list of phone numbers at [http://support.netgear.com/app/answers/detail/a\\_id/984](http://support.netgear.com/app/answers/detail/a_id/984)

## Trademarks

NETGEAR, the NETGEAR logo, and Connect with Innovation are trademarks and/or registered trademarks of NETGEAR, Inc. and/or its subsidiaries in the United States and/or other countries. Information is subject to change without notice. Other brand and product names are registered trademarks or trademarks of their respective holders. © 2011 NETGEAR, Inc. All rights reserved.

## Statement of Conditions

To improve internal design, operational function, and/or reliability, NETGEAR reserves the right to make changes to the products described in this document without notice. NETGEAR does not assume any liability that may occur due to the use, or application of, the product(s) or circuit layout(s) described herein.

# Contents

## Chapter 1 Get Started

System Requirements . . . . .	7
Additional Documentation . . . . .	7
Get Started . . . . .	7
About RAIDar . . . . .	10
About FrontView . . . . .	12

## Chapter 2 Manage Storage Space

Basic Disk Configuration Concepts . . . . .	16
RAID . . . . .	16
Volumes . . . . .	16
X-RAID and Flex-RAID . . . . .	17
Manage Your Storage Space with X-RAID . . . . .	17
Add a Disk . . . . .	18
Increase Storage Space By Replacing All Disks . . . . .	18
Manage Your Storage Space with Flex-RAID . . . . .	19
Change to Flex-RAID . . . . .	19
Create a Volume . . . . .	20
Add a Disk to a Volume . . . . .	21
Replace a Disk in a Volume . . . . .	22
Use USB Storage Devices . . . . .	23
Manage a USB Storage Device . . . . .	24
Automatically Copy a USB Device's Contents . . . . .	24

## Chapter 3 Secure Files

Select a Security Mode . . . . .	27
Select a Security Mode . . . . .	27
Set Up a Domain Server . . . . .	28
Manage Users and Groups . . . . .	29
Manage Users . . . . .	29
Customize Private Home Shares . . . . .	31
Manage Groups . . . . .	34
Import and Export Users . . . . .	35
Change and Recover the Admin Password . . . . .	38

## Chapter 4 Store Files

Basic Share Concepts . . . . .	40
Data Organization . . . . .	40
File-Sharing Protocols . . . . .	41
Access Rights . . . . .	42
Manage File-Sharing Protocols . . . . .	43
Create a Share . . . . .	46
Create a Share with the User or Domain Security Mode . . . . .	46
Create a Share with the Share Security Mode . . . . .	46
Manage Share Access . . . . .	47
Manage Share Access with the User or Domain Security Mode . . . . .	48
Manage Share Access with the Share Security Mode . . . . .	57
Set Options for a Share . . . . .	59
Hide a Share . . . . .	59
Use the Recycle Bin on CIFS Shares . . . . .	59
Cache Files Locally Using CIFS . . . . .	60
Enable Syncing Using NFS . . . . .	60
Set Permissions for New Files and Folders . . . . .	61
Broaden Rename and Delete Privileges . . . . .	62
Reset Ownership and Permissions On Any Share . . . . .	62
Access a Share . . . . .	64
Access a Share from a Windows Device . . . . .	64
Access a Share from a Mac OS X Device . . . . .	64
Access a Share From a UNIX or Linux Device . . . . .	65
Access a Share Using FTP . . . . .	65
Access a Share Using a Web Browser . . . . .	65
Access a Share Using ReadyNAS Remote . . . . .	66

## Chapter 5 Stream Multimedia Files

Stream Multimedia Files for iTunes with Firefly . . . . .	70
Set Up iTunes Streaming . . . . .	70
Use Smart Playlists . . . . .	71
Select Which Music Files to Stream . . . . .	72
Change the Server Name and Password . . . . .	72
Change How to Scan Media Files . . . . .	73
Stream Multimedia Files for TiVo and Xbox with ReadyDLNA . . . . .	74
Share Photos With ReadyNAS Photos . . . . .	75
Get Started with ReadyNAS Photos . . . . .	75
Create Photo Albums . . . . .	75
View and Share Photos . . . . .	76
Set Up Discovery Services . . . . .	77

## Chapter 6 Back Up Files

Back Up a Mac to a ReadyNAS System with Time Machine . . . . .	79
Back Up a ReadyNAS System Remotely with ReadyNAS Vault . . . . .	80
Back Up to or from a ReadyNAS System . . . . .	80
Create a Backup Job . . . . .	81
Assign Backup Jobs to the Backup Button . . . . .	85
Edit a Backup Job . . . . .	86
Recover Backed-up Data . . . . .	86
Use Snapshots . . . . .	87

## Chapter 7 Other Services

Create and Access a Local Website . . . . .	90
Set Up a Printer . . . . .	90

## Chapter 8 Manage the ReadyNAS System

Set the Time and Time Zone . . . . .	93
Set the Language . . . . .	94
Send Alerts . . . . .	94
Change The Account Used to Send Email Alerts . . . . .	95
Change Who Receives Alerts . . . . .	95
Determine When to Send Alerts . . . . .	96
Turn the ReadyNAS System On and Off . . . . .	96
Turn the ReadyNAS System Off Now . . . . .	96
Restart the ReadyNAS System . . . . .	97
Turn the ReadyNAS System On and Off Using a Schedule . . . . .	97
Turn Off the ReadyNAS System Automatically to Prevent Damage . . . . .	98
Back Up and Restore Settings . . . . .	98
Manage Add-Ons . . . . .	99
Manage Installed Add-Ons . . . . .	99
Install an Add-On . . . . .	99
Improve Performance . . . . .	100
Set Network Settings . . . . .	101
Set TCP/IP Address Information . . . . .	101
Set Your ReadyNAS System to Work as a DHCP Server . . . . .	102
Change Host Name . . . . .	102
Set Ethernet Options . . . . .	103
Enable WINS Support . . . . .	103
Enable Jumbo Packet Support . . . . .	104
View Log Files . . . . .	104

## Appendix A Notification of Compliance

## Index

# Get Started

---

# 1

This manual describes how to use RAIDiator 4.1 firmware for the ReadyNAS Duo, ReadyNAS NV+, and 1100 storage systems.

This chapter includes the following topics:

- *System Requirements*
- *Additional Documentation*
- *Get Started*
- *About RAIDar*
- *About FrontView*

## System Requirements

You can use RAIDiator 4.1.8 to manage any ReadyNAS Duo or ReadyNAS NV+ on your local network. To use RAIDiator, you need the following:

- A computer with Microsoft Windows 7, Vista, XP, 2000, Mac OS, UNIX, or Linux operating system
- Microsoft Internet Explorer 7.0+, Apple Safari, 2.0+, Mozilla Firefox 2.0+, Opera 9.5+, or Google Chrome 10+ browser

## Additional Documentation

For detailed information about configuring, managing, and using your ReadyNAS Duo, NV+, or 1100 storage system, see the hardware manual for your system. Manuals are available at <http://www.readynas.com/documentation>.

NETGEAR maintains a community website that supports ReadyNAS products. Visit <http://readynas.com> for reviews, tutorials, a comparison chart, software updates, documentation, an active user forum, and much more.

## Get Started

This section describes the steps to get your ReadyNAS storage system up and running.

### ➤ To get started with your ReadyNAS system:

1. Before you start your ReadyNAS system, set it up according to the instructions in the hardware manual for your system.

Manuals are available at <http://www.readynas.com/documentation>.

2. If your ReadyNAS system does not have any disks, install at least one.

You must use disks listed on the ReadyNAS Hardware Compatibility List, which is available at [http://www.readynas.com/hard\\_disk\\_hcl](http://www.readynas.com/hard_disk_hcl).

For more information about how to install disks, see the hardware manual for your system.

3. Turn on your ReadyNAS system.
4. Download the version of RAIDar for your computer.  
You can download RAIDar at <http://www.readynas.com/downloads>.
5. Launch the installer and follow the onscreen instructions to install RAIDar.
6. Launch RAIDar.
7. Highlight your ReadyNAS system and click the **Setup** button.

Your browser opens and displays a dialog box asking you to enter the user name and password for the ReadyNAS system.

8. Enter the default user name and password and click the **Next** button.

Following are the default credentials:

- **User name.** admin
- **Password.** netgear1

They are both case-sensitive.

FrontView displays in Setup Wizard mode. The first screen displays basic information about your ReadyNAS system.

9. In each screen, enter your information, click the **Apply** button, and click the **Next** button.

If you do not click the Apply button before you click the Next button, the changes are not saved.

The Setup Wizard has these screens:

- **Clock.** Make sure the time and time zone are correct. For more information, see [Set the Time and Time Zone](#) on page 93.
- **Contacts.** The ReadyNAS system can send email messages to administrators about important events, such as when a disk is failing. Enter up to three email addresses for the people you want to receive these messages, and then enter information for an email account that can send these messages. The account from which the email messages are sent does not need to be the same as one of the administrative email addresses. For more information, see [Send Alerts](#) on page 94.
- **Ethernet.** Most of this information is standard and does not need to be changed in most environments. For more information, see [Set Network Settings](#) on page 101.
- **Global Settings.** Change the name for the ReadyNAS system and its DNS settings. You might want to change the name to something more descriptive. The DNS settings are standard and do not need to be changed in most environments. For more information, see [Set Network Settings](#) on page 101.
- **Admin Password.** You can change the password you need to enter before you can use FrontView and choose a security question to answer if you want to recover that password. If you forget the password, visit a special website, answer the security question and provide the email address entered here. If you enter both correctly, a new password is emailed to the email address. For more information, see [Change and Recover the Admin Password](#) on page 38.
- **Security Mode.** This screen displays only if you have a ReadyNAS NV+ or 1100. You can choose how to protect the files on your shares. NETGEAR recommends selecting user mode, which lets you create a user account for each person who can access the shares, and then set a user name and password for each. NETGEAR does not recommend using share mode because it does not work with recent versions of Mac OS X or Windows. NETGEAR does not recommend domain mode because it requires a Windows server or Active Directory server on your local network. For more information, see [Select a Security Mode](#) on page 27.
- **Accounts.** Create user accounts for the people who access your ReadyNAS system. For more information, see [Manage Users and Groups](#) on page 29.



- **Standard File Protocols.** Choose the protocols used to make the files available to users. For more information, see [Store Files](#) on page 39.
- **Streaming Services.** If you want to stream multimedia files from your ReadyNAS system to other devices on your network, choose how to do it. For more information, see [Stream Multimedia Files](#) on page 69.
- **Installed Addons.** Choose whether to use ReadyNAS Photos and ReadyNAS Remote. ReadyNAS Photos lets you share your photographs with others. ReadyNAS Remote lets you access your files from a computer that is not on the local network. For more information about add-ons, see [Manage Add-Ons](#) on page 99. For more information about ReadyNAS Photos, see [Share Photos With ReadyNAS Photos](#) on page 75. For more information about ReadyNAS Remote, see [Access a Share Using ReadyNAS Remote](#) on page 66.
- **Share List and Add Shares.** Create the shares that contain the files you want others to access. Your system comes with two shares already created: media and backup. For more information, see [Store Files](#) on page 39.
- **USB Printers.** If you connect a printer to the USB port of your ReadyNAS system, you can configure it here. For more information, see [Set Up a Printer](#) on page 90.

Pay special attention to the Admin Password and Security Mode screens. Choose a different admin password from the default password. If you have a ReadyNAS NV+ or 1100, change the security mode because share mode, which is the default mode, is not compatible with recent versions of Mac OS X and Windows.

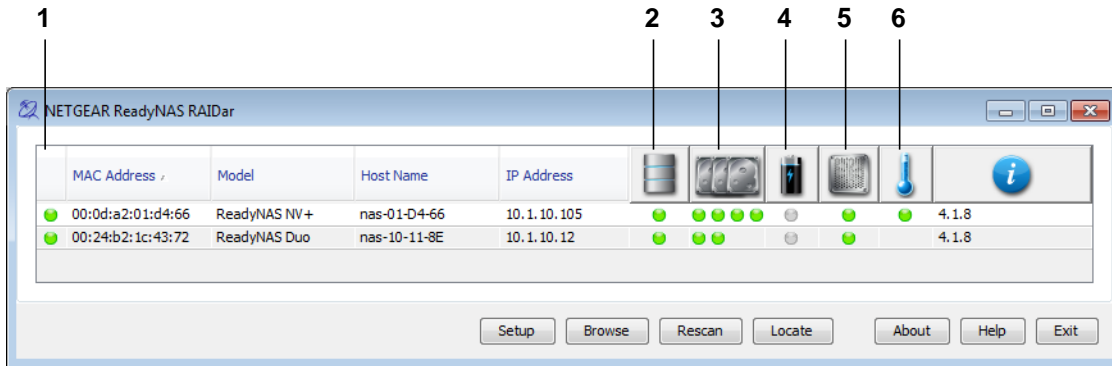
At any time, you can exit the Setup Wizard by clicking the **Switch to Advanced Control** button. You can set the options included in these screens later.

10. (Optional) Click the **Register Product** button and follow the prompts to register your ReadyNAS system.

You must register your storage system before you can use NETGEAR telephone support.

## About RAIDar

RAIDar is a software application that you use to discover ReadyNAS storage systems on your network. RAIDar displays several icons to help you determine the status of your system and buttons along the bottom perform actions on the systems, as shown in the following figure.






















**Figure 1. RAIDar icons**

1. Overall status
2. Volume status
3. Disk status
4. UPS status
5. Fan status
6. Temperature

Hover your pointer over a status light for more detailed information about that component. For example, hover the pointer over the temperature status light for the exact temperature, and hover it over the volume status light for the total size of the volume.

The following table provides a description of each LED icon.

**Table 1. RAIDar LED icon descriptions**

Icon	LED icon	Description
Overall status		The system is operating normally.
		The system is failing or needs attention.
		The system is performing a lengthy procedure such as installing an update.
Volume status		The volume is operating normally.
		The volume is failing or needs attention.
	 (Blinking)	The volume is syncing.
		The volume is on life support because it experienced multiple disk failures. The volume's data might be lost. Contact NETGEAR technical support for help. If the volume went into life support mode because you accidentally removed more functional disks, NETGEAR technical support might be able to help you recover the data.
Disk status		No disk is installed in the corresponding bay.
		The disk is operating normally.
		The disk is failing or needs attention.
	 (Blinking)	The disk is syncing.
		The disk is a spare. If another disk fails, the ReadyNAS system uses this disk as a replacement.
UPS status		No UPS device is available.
		This UPS device is operating normally.
		This UPS device is failing and needs attention.
Fan status		The fan is operating normally.
		The fan is failing and needs attention.
Temperature		The temperature is within acceptable limits.
		The temperature is at a dangerous level.

The buttons along the bottom of the RAIDar screen perform the following actions on the highlighted ReadyNAS system:

- **Setup.** Launches FrontView for the selected system. FrontView opens in a browser window and lets you change the settings for your ReadyNAS system.
- **Browse.** Displays the shares available on the highlighted system. This button is available only in the Windows version of RAIDar.
- **Rescan.** Updates the list of ReadyNAS systems on the network and the status of each one.
- **Locate.** Blinks the LEDs on the highlighted system. This is useful if you have multiple ReadyNAS storage systems and you need to determine which RAIDar entry corresponds to which system.
- **About.** Displays information about RAIDar.
- **Help.** Displays help about RAIDar.
- **Exit.** Closes RAIDar.

## About FrontView

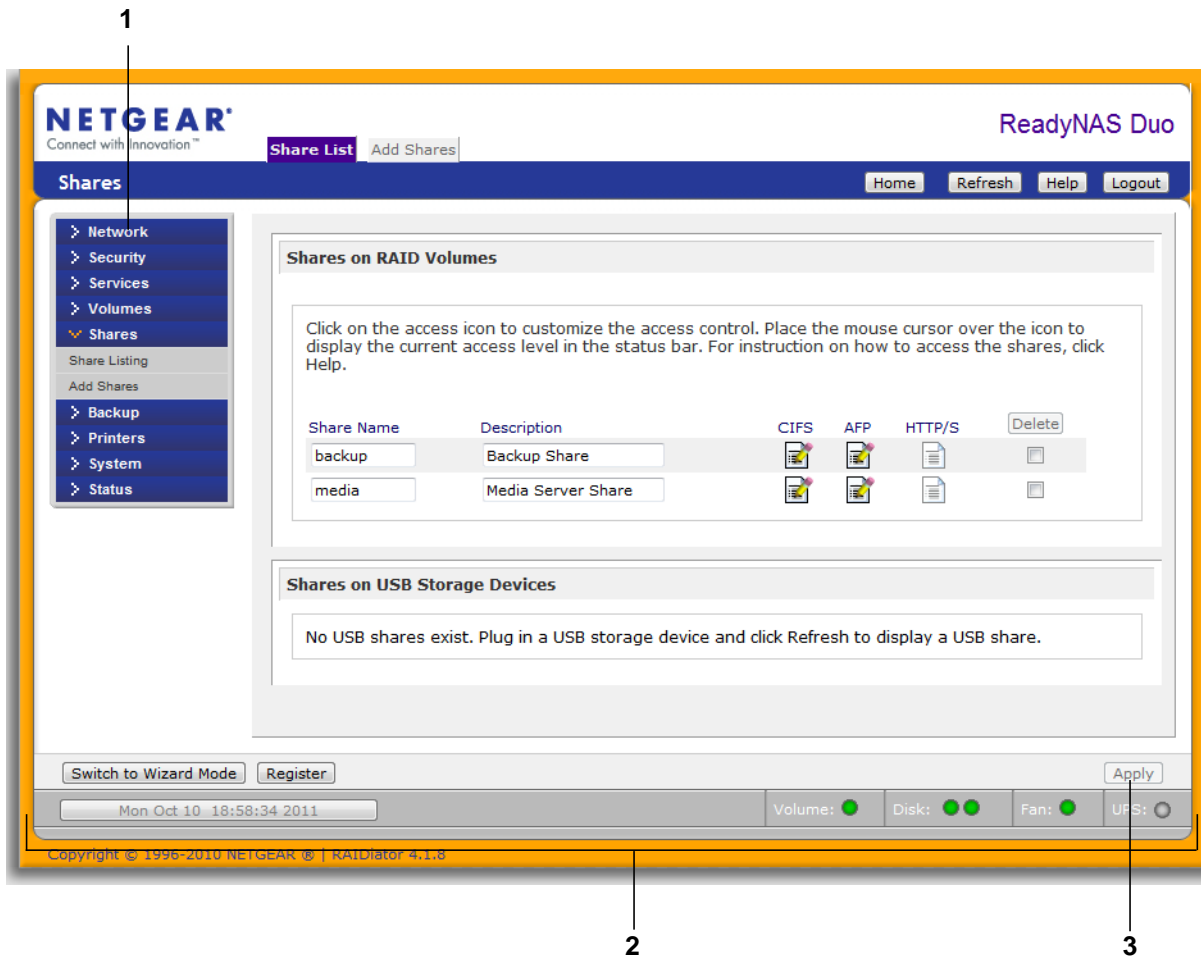
FrontView is the web-based management interface for your ReadyNAS system. FrontView makes it easy to create shares to store files, create user accounts, choose who can access your files, create backup jobs to protect your files, and more.

FrontView displays in your web browser, so you can use it on any computer or device that supports the following browsers:

- Microsoft Internet Explorer 7.0+
- Apple Safari 2.0+
- Mozilla Firefox 2.0+
- Opera 9.5+
- Google Chrome 10+

When you first launch FrontView, it opens in Setup Wizard mode, which steps you through the process of setting up your ReadyNAS system. When you finish the Setup Wizard, or when you click the Switch to Advanced Control button, FrontView uses Advanced Control mode, which displays more options and lets you choose which settings to edit.

The following figure shows FrontView in Advanced Control mode.



**Figure 2. ReadyNAS FrontView main menu in Advanced Control mode**

1. Main menu
2. Status bar
3. Apply button

The status bar displays the current time and the status of the ReadyNAS system's components. It uses the same status lights as RAIDar, as described in [About RAIDar](#) on page 10. Hover your pointer over a status light to display more information about that component, such as the size of a disk or the presence of a UPS connection. Click the current time to change the time or set the time zone.

After you set up your ReadyNAS system, if you need to change your settings, use FrontView.

➤ **To use FrontView:**

1. Launch RAIDar.

For more information about RAIDar, see *Get Started* on page 7.

2. Highlight your ReadyNAS system and click the **Setup** button.

A dialog box displays prompting you to log in to your system.

3. Provide your credentials.

Following are the default credentials:

- **User Name.** admin
- **Password.** netgear1

You should have changed your password when you used the Setup Wizard. This is an important step in safeguarding your data. If you changed your password, enter the password you created instead of the default password.

4. From the FrontView main menu, select an item to view and edit its options.

If you do not see the main menu, click the **Switch to Advanced Control** button.

5. When you are done editing the options, click the **Apply** button.

Your changes are not saved if you do not click the Apply button.

## 2 Manage Storage Space

---

# 2

This chapter describes how to manage the disks in your ReadyNAS system, including how to increase the amount of storage space and how to choose between X-RAID and Flex-RAID. You can also attach a USB storage device to your ReadyNAS system to increase storage space.

This chapter includes the following topics:

- *Basic Disk Configuration Concepts*
- *Manage Your Storage Space with X-RAID*
- *Manage Your Storage Space with Flex-RAID*
- *Use USB Storage Devices*

## Basic Disk Configuration Concepts

To get the most out of your ReadyNAS storage system, it is helpful to understand some disk configuration concepts. Understanding these concepts is the first step to making good decisions about how to configure, manage, and use your ReadyNAS storage system.

You can configure your storage system's hard disks in a variety of ways. The most common way to configure disks is using one of the many RAID technologies.

### RAID

RAID is short for redundant array of independent disks. RAID is a storage technology that balances data protection, system performance, and storage space by determining how the storage system distributes data. Many different ways of distributing data have been standardized into various RAID levels. Each RAID level offers a trade-off between data protection, system performance, and storage space. For example, one RAID level might improve data protection but reduce storage space. Another RAID level might increase storage space but reduce system performance.

Your ReadyNAS storage system supports X-RAID®, a proprietary single-volume RAID architecture that is easy to administer, and Flex-RAID, which allows you to format your disks in a variety of industry-standard RAID levels.

### Volumes

In the most general sense, volumes are data storage devices. Your computer treats an internal hard drive as a volume. It also treats a portable USB thumb drive as a volume.

Volumes can be either physical or logical. Usually, the term *physical volume* refers to a hard disk drive. When this term is used in this way, a two-bay storage system can have up to two physical volumes (hard disk drives), a four-bay storage system can have up to four physical volumes, and a six-bay storage system can have up to six physical volumes.

The term *logical volume* refers to the way that you divide, or partition, your storage space, for example:

- Each logical volume can correspond to a hard disk drive.
- A logical volume can be made up of more than one hard disk drive.

In this manual, the term *volume* refers to a *logical volume* and the terms *hard disk drive* and *disk* refer to a *physical volume*.



## X-RAID and Flex-RAID

Your ReadyNAS system gives you two ways to choose which type of RAID technology to use: X-RAID and Flex-RAID.

- **X-RAID.** NETGEAR's proprietary single-volume architecture that automatically chooses which type of RAID set is best depending on the number of disks in your ReadyNAS system. X-RAID chooses to protect your data against disk failure whenever possible. If your ReadyNAS system contains two or more disks and a disk fails, no files are lost and users can continue to access the ReadyNAS system as normal. When you add a disk to your ReadyNAS system, it is formatted in the background while users continue to access your unit.
- **Flex-RAID.** Offers more flexibility because it lets you choose how many volumes to create, which type they should be, and whether to use a disk as a hot spare. (If another disk fails, the hot spare automatically replaces it.) With Flex-RAID, adding a disk to a volume takes more work than with X-RAID because you need to take your system offline as you manually back up your data, add the disk, and restore your data.

## Manage Your Storage Space with X-RAID

X-RAID is the default disk management system for ReadyNAS NV+ and ReadyNAS Duo. It chooses which type of RAID set is best for you depending on the number of disks in your ReadyNAS system, protecting your data against disk failure whenever possible.

With one disk installed, X-RAID uses all its capacity for storage. But if the disk fails, you lose all your files.

With two or more disks installed, you are protected against disk failure. With just two disks, the disks are mirrored: Each disk holds a complete copy of your data. With three or four disks, one disk's worth of capacity contains information that is used to recover your files in case of disk failure, and the rest of the capacity is available for storing. The capacity of a ReadyNAS system with X-RAID is determined by the number of disks installed, as follows:

- If your system has two disks, you have one disk's worth of storage space.
- If your system has three disks, you have two disks' worth of storage space.
- If your system has four disks, you have three disks' worth of storage space.

When you add a disk, your ReadyNAS system automatically formats it in the background and adds it to the X-RAID volume while users continue to access the unit normally. If you have at least two disks installed, when a disk fails, the administrator receives an email message to replace the disk as soon as possible. Meanwhile, users can continue to access the ReadyNAS system.

If all the disk bays in your ReadyNAS system are filled, you can still expand your storage space. Just replace all the disks with larger ones, one at a time.

## Add a Disk

You can add a disk to your ReadyNAS system to protect yourself against disk failure or to increase your storage space. If you add a second disk to your unit, the disks are mirrored. If you add a third or fourth disk, one disk's worth of capacity is used for storing disk recovery information.

### ➤ To add a disk:

1. Find a disk that is compatible with your ReadyNAS system.

A list of compatible disks is at [http://www.readynas.com/hard\\_disk\\_hcl](http://www.readynas.com/hard_disk_hcl).

For best performance, use disks that are the same make, model, and size. If you use disks of different sizes, your ReadyNAS system treats the disks as though they were all the same size as the smallest disk. For example, if you have four disks, where three are 1 TB and one is 500 GB, it treats all the disks as if they were 500 GB and gives you only 1.5 TB of space for files.

2. Follow the instructions in your hardware manual to add a disk.

Your ReadyNAS system sends one email message to the administrator when it starts formatting the new disk and another email message when it finishes formatting.

Depending on the size of the disks and the number of files on your system, this process might take several hours, but you can continue to use your system as normal.

## Increase Storage Space By Replacing All Disks

If all the disk bays in your ReadyNAS system are filled, you can expand your storage space by replacing all the disks with larger ones. To avoid losing data, replace the disks one at a time. Because replacing one disk can take several hours, the entire process can take a day or more; however, you do not lose any files and you can use your system without interruption during the entire process.

### ➤ To increase storage space by replacing all disks:

1. Find disks that are compatible with your ReadyNAS system.

A list of compatible disks is at [http://www.readynas.com/hard\\_disk\\_hcl](http://www.readynas.com/hard_disk_hcl).

For best performance, use disks that are the same make, model, and size. If you use disks of different sizes, your system treats the disks as though they were all the same size as the smallest disk. For example, if you have four disks, where three are 1 TB and one is 500 GB, it treats all the disks as if they were 500 GB and gives you only 1.5 TB of space for files.

2. Follow the instructions in your hardware manual to replace a disk.

Your system sends an email message to the administrator when it starts formatting the new disk and another email message when it finishes formatting.

3. When the disk is formatted, replace the next disk, until they are all replaced.

When the last disk is formatted, your system is available with the larger capacity.

## Manage Your Storage Space with Flex-RAID

Flex-RAID lets you choose how many volumes to create, which RAID level to use, and whether to use a disk as a hot spare. If another disk fails, the hot spare automatically replaces it. Flex-RAID supports three industry-standard RAID levels:

- **RAID 0.** Uses all the space on the disks to store data, but it does not protect against disk failure. It provides the best write performance of all the RAID levels because it stripes data across all disks and it can write to all disks in parallel. If one disk fails, you lose all the data. You can create a RAID 0 volume with one or more disks. Its capacity is the size of the smallest disk in the volume multiplied by the number of disks in the volume. For example, a four-disk RAID 0 volume yields the capacity of all four disks, assuming they are identical in size.
- **RAID 1.** Offers the most protection against disk failure, because each disk in the volume contains a full copy of the volume's data. The data in a RAID 1 is protected as long as just one disk is OK. Its capacity is the size of the smallest disk in the volume.
- **RAID 5.** Balances capacity and performance while protecting your data. RAID 5 stripes data across three or more disks and stores parity information about each disk. If one disk fails, RAID 5 technology uses the parity information about the remaining disks to reconstruct the data that was on the failed disk, and the volume continues to serve data without interruption, although it might be slower. When you replace the failed, the reconstructed data is written to the new disk. The capacity of a RAID 5 volume is the smallest disk in the volume multiplied by one less than the number of disks in the volume. For example, a four-disk RAID 5 volume provides the capacity of three disks, assuming all four disks are identical in size.

### Change to Flex-RAID

Your ReadyNAS system uses X-RAID by default. To change to Flex-RAID, perform a factory reset and choose Flex-RAID with RAIDar. Be aware that a factory reset erases all the data and settings on your ReadyNAS system and that the process might take several hours.

➤ **To change to Flex-RAID:**

1. Back up all the data and settings you want to save from your ReadyNAS system.  
For information about backing up files, see [Back Up Files](#) on page 78. For information about backing up settings, see [Back Up and Restore Settings](#) on page 98.
2. Launch RAIDar.  
You will use it later to change between the two modes.
3. Perform a factory reset reboot.  
For more information about how to perform a factory reset reboot, see the hardware manual for your system.
4. In RAIDar, watch for Setup to display in your ReadyNAS system's Info column.  
It might take a few minutes for Setup to display in RAIDar.

5. Highlight your system and click the **Setup** button.

The ReadyNAS Volume Setup screen displays.

6. Select the **Flex-RAID** radio button.

If you do not pick a format within 10 minutes, your system reboots in the same mode that it was previously using.

7. From the Select the desired RAID level drop-down list, select a RAID level.

If you select Auto, your ReadyNAS system automatically selects a RAID level based on the number of disks that are installed in your system, as follows:

Number of installed disks	RAID level automatically selected
1	RAID 1
2	
3	RAID 5
4	

8. Click the **Next** button.

You are prompted to confirm the volume creation command.

9. Confirm the command.

The volume is formatted. This can take quite a while, depending on the size of your hard disk drives.

10. (Optional) Restore any backed-up data and settings.

For more information about restoring files, see [Recover Backed-up Data](#) on page 86. For more information about restoring settings, see [Back Up and Restore Settings](#) on page 98.

## Create a Volume

You can create up to four data volumes. Each disk can have up to two data partitions.

### ➤ To create a volume:

1. From the FrontView main menu, select **Volumes > Volume Settings**.
2. If it is not already selected, click the **Add Volumes** tab.
3. Select the check box to the left of each disk that you want to include in the RAID set.
4. From the Select RAID level drop-down list, select a RAID level.

5. From the Space reserved for snapshots drop-down list, select how much space to reserve for a snapshot.

A snapshot is a read-only copy of the volume's files as they were at a specific time. The volume stores information about the changes that happened to the files after that time to a separate area of the volume. If the amount of space needed for the changes surpasses the area reserved, the volume stops maintaining the snapshot.

6. In the Desired volume size field, enter a size for the new volume.

You can enter size smaller than the one already listed.

7. Click the **Apply** button and click the **Restart Now** button.

Your ReadyNAS system restarts. When the volume is created, you receive an email message.

## Add a Disk to a Volume

To add a disk to a volume, you must delete the volume and then recreate it with the additional disk.

### ➤ To add a disk to a volume:

1. Back up the data in the volume.

For more information, see [Back Up Files](#) on page 78.

2. From the FrontView main menu, select **Volumes > Volume Settings**.

3. Click the tab for the volume you want to delete.

If you have just one volume, it is called Volume C.

4. Click **Delete Volume**.

You receive an email message when the deletion process starts and another when the deletion process finishes.

5. Insert a new compatible disk.

For a list of compatible disks, see [http://www.readynas.com/hard\\_disk\\_hcl](http://www.readynas.com/hard_disk_hcl).

For best performance, use disks that are the same make, model, and size. If you use disks of different sizes, your system treats the disks as though they were all the same size as the smallest disk. For example, if you have four disks, and three are 1 TB and one is 500 GB, it treats all the disks as if they were 500 GB and gives you only 1.5 TB of space for files.

You receive an email message alerting you that a new disk was inserted.

6. Create a new volume including the additional disk.

For more information, see [Create a Volume](#) on page 20.

7. Restore your backed-up data to the new volume.

For more information, see [Recover Backed-up Data](#) on page 86.

## Replace a Disk in a Volume

You can replace a disk in a volume if you suspect it is about to fail or if you want to increase the volume's capacity. If the volume is formatted to use RAID 1 or RAID 5, you can replace a disk without losing data. And if you want to increase your volume's capacity, you can replace each disk in the set one at a time until they are all replaced, without losing any data. If the volume is formatted to use RAID 0, back up your data to avoid losing it.

### ➤ To replace a disk in a RAID 1 or RAID 5 volume:

1. Remove the disk from your ReadyNAS system.

You receive an email message alerting you that the disk was removed and your data is no longer protected.

2. Insert a new compatible disk.

For a list of compatible disks, see [http://www.readynas.com/hard\\_disk\\_hcl](http://www.readynas.com/hard_disk_hcl).

For best performance, use disks that are the same make, model, and size. If you use disks of different sizes, your system treats the disks as though they were all the same size as the smallest disk. For example, if you have four disks, and three are 1 TB and one is 500 GB, your system treats all the disks as if they were 500 GB and gives you only 1.5 TB of space for files.

You receive an email message alerting you that a new disk was inserted.

3. From the FrontView main menu, select **Volumes > Volume Settings**.
4. Click the **Make Hot Spare** button beside the new disk.

Because a disk is missing, RAIDiator automatically adds the new hot spare to the volume.

### ➤ To replace a disk in a RAID 0 volume:

1. Back up the data in the volume.

For more information, see [Back Up Files](#) on page 78.

2. From the FrontView main menu, select **Volumes > Volume Settings**.
3. Click the tab for the volume you want to delete.

If you have just one volume, it is called Volume C.

4. Click **Delete Volume**.

You receive an email message when the deletion process starts and another when the deletion process finishes.

5. Remove the disk from your ReadyNAS system.

You receive an email message alerting you that the disk was removed and your data is no longer protected.

6. Insert a new compatible disk.

For a list of compatible disks, see [http://www.readynas.com/hard\\_disk\\_hcl](http://www.readynas.com/hard_disk_hcl).

For best performance, use disks that are the same make, model, and size. If you use disks of different sizes, your system treats the disks as though they were all the same size as the smallest disk. For example, if you have four disks, and three are 1 TB and one is 500 GB, your system treats all the disks as if they were 500 GB and gives you only 1.5 TB of space for files.

You receive an email message alerting you that a new disk was inserted.

7. Create a new volume including the new disk.

For more information, see [Create a Volume](#) on page 20.

8. Restore your backed-up data to the new volume.

## Use USB Storage Devices

You can connect a USB storage device, such as a disk drive or a digital camera, to any USB port on your ReadyNAS system. You can then format it, copy its contents to your ReadyNAS system, or let others access its contents. This section describes how to format it and copy its contents. You let users access the device's contents in much the same way you let users access the contents of your ReadyNAS shares. For more information, see [Store Files](#) on page 39.

After you set your options for a USB device and disconnect it, the options are remembered the next time you connect the device to your ReadyNAS system.

The USB device must be formatted with one of these formats:

- FAT32
- NTFS
- EXT2
- EXT3

## Manage a USB Storage Device

After you connect a USB device to your ReadyNAS, you can format it, locate it, or check its file system.

### ➤ To manage a USB storage device:

1. Connect the device to any USB port on your ReadyNAS system.
2. From the FrontView main menu, select **Volumes > USB Storage**.
3. From the drop-down list beside the device's entry, select any of these options:
  - **Locate.** Flashes the device's LED light so you can find it more easily.
  - **Check Filesystem.** Checks the device's file system for problems.
  - **Format FAT32.** Formats the device's file system as FAT 32, erasing any content on it. FAT32 is recognized by most newer Windows, Linux, and Unix systems and imposes a 4 GB limitation per file.
  - **Format EXT3.** Formats the device's file system as EXT3, erasing any content on it. EXT3 is recognized by Linux systems and some network storage systems, retains file ownership information, and imposes no size limitation per file.
  - **Disconnect.** Prepares the device for disconnection. This writes out any data in the write cache to the device to ensure that you do not lose the data.
4. Click **Go**.

## Automatically Copy a USB Device's Contents

You can copy the contents of a USB storage device to your ReadyNAS system whenever you connect the device. For example, you can copy pictures from a digital camera or music from an MP3 player.

To avoid overwriting previously copied files, the files are copied to a folder whose name is the date and time that the files were copied.

### ➤ To set up a USB device to automatically copy its contents:

1. Connect the device to any USB port on your ReadyNAS system.
2. From the FrontView main menu, select **Volumes > USB Storage**.
3. In the USB Flash Device Option pane, select the **When a USB flash device is detected, automatically copy the content to** check box.



4. Determine where to copy the files:
  - From the Share drop-down list, select the name of the share.
  - In the Path field, enter the path name.

For example, to copy the files to the Vacation folder in the Pictures folder on the media share, from the Share drop-down list, select **media**, **and** in the Path field, enter **Pictures/Vacation**.

5. In the Copy as owner field, enter the name of the user you want to own the copied files on the ReadyNAS system.

The default owner is admin.

6. Click the **Apply** button.

Your settings are saved.

# Secure Files

---

# 3

Before you can let users access files on your ReadyNAS system, you need to select a security mode to protect those files. Then, depending on the mode you select, you need to create user accounts to specify who can access the files.

This chapter includes the following topics:

- *Select a Security Mode*
- *Manage Users and Groups*
- *Change and Recover the Admin Password*

## Select a Security Mode

The ReadyNAS Duo supports only the user security mode.

The ReadyNAS NV+ and 1100 support up to three security modes for protecting the files on your shares:

- **Share mode.** This security mode offers just two levels of security for a share: Either you protect it with a password or you do not. If you do not password protect it, anyone can access it. If you do password protect it, anyone with the password can access it. NETGEAR recommends that you do not use this security mode because it is not supported by Windows 7 or later and Mac OS X v10.6 or later. Also, it is available only on some versions of the ReadyNAS NV+ and 1100.
- **User mode.** This security mode provides many more security options than the share mode. You can create any number of users, and select how much access to give each one: You can let the user just read files, or you can let the user read, create, and modify files. Each user must enter a password before accessing a share.
- **Domain mode.** This security mode is similar to user mode, except information about users comes from a Windows server or Active Directory server that is on your local network.

User mode is preferred for home and small office users because it is supported by the latest versions of Windows and Mac OS X, provides strong security, and does not require a server.

## Select a Security Mode

This procedure applies only to the ReadyNAS NV+ and 1100.

➤ **To select a security mode:**

1. From the FrontView main menu, select **Security > Security Mode**.
2. Select either **Share**, **User**, or **Domain**.
3. Enter the name of the workgroup.
4. Click the **Apply** button.

Your settings are saved.

If you select the user mode, you then need to create accounts for the people who will use your ReadyNAS system.

## Set Up a Domain Server

If your ReadyNAS NV+ or 1100 storage system is on the same network as a Windows server or Active Directory server, you can use the user and group information that is on the server. If you select the **Display users from trusted domains** option, the user and group information displays in the Accounts screen and you can add information that is specific to your ReadyNAS system, as follows:

- Specify disk quotas for users and groups.
- Specify email addresses for users, so they can be notified about their disk quotas.

NETGEAR does not recommend using domain mode if the server has more than 1,000 users.

This procedure applies only to the ReadyNAS NV+ and 1100.

### ➤ To set up a domain server:

1. From the **Domain Type** drop-down list, select **ADS** (Active Directory server) or **Domain**.
2. Enter the name of the domain.
3. If you select ADS, enter the address of the realm and the OUs (organizational units).  
Specify nested OUs by separating them with commas. Enter the lowest-level OU first.
4. (Optional) If you want your system to detect the IP address for the domain controller automatically, in the Domain Controller pane, select **Auto detect**.

If auto detect fails, enter the IP address in the field.

5. Enter the domain administrator's name and password.
6. (Optional) To display users from the server in the Accounts screen, select the **Display users from trusted domains** check box.

If you have a large number of users, you might want to clear this check box to avoid slowing FrontView when it displays the Accounts screen.

7. Click the **Apply** button.

Your settings are saved.

## Manage Users and Groups

If you selected the user security mode, you can set up user accounts. Create a user account for each person who accesses your ReadyNAS system. When you create a share, use these accounts to specify who can access its files.

To manage large numbers of users more efficiently, create groups. A group can contain any number of users, and a user can belong to as many groups as you want. If you frequently give the same list of users the same access rights to different shares, create a group that is made up of those users.

Each user has a private home share where he or she can store personal files. Unlike a public share, a private home share has the same name as the user name for the account and can be accessed only by that user and by the ReadyNAS system's administrator. You can disable private home shares if you want to use only public shares.

### Manage Users

With FrontView, you can add new users, modify existing users, and choose how to handle the users' private home shares.

#### Add Users

In the Add User screen, you can add up to five users at a time.

##### ➤ To add users:

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. Click the **Add User** tab.
3. For each user, follow these steps:

- a. Enter the name for the user.

This is also the name for the user's private home share.

- b. (Optional) If you want the user to receive notifications, enter the user's email address.

The user is notified when the account is created and when the user's data quota is approached.

- c. (Optional) If you want to specify a specific user ID (UID), enter the UID.

You need to know the UID if you plan to connect to the user's private home share over NFS. If you do not enter a UID, one is automatically generated.

- d. Select the user's primary group.

You can add the user to other groups in the Manage Groups screen. For more information, see [Manage Groups](#) on page 34.

- e. Enter the user's password.

If you want the user to be able to change his or her password, see [Manage Users Passwords](#) on page 31.

- f. (Optional) If you want to set a limit on the amount of data that the user can copy to all the ReadyNAS system's shares, enter a quota.

The quota applies to all the system's shares. For example, if the user copies 400 MB of files to the media share and 100 MB to the user's private home share, that is a total of 500 MB towards that user's quota.

If you specified an email address, the user receives a email message when the amount of data on the shares approaches the quota.

4. Click the **Apply** button.

Your settings are saved.

### *Change a User's Name, Password, Email Address, or Quota*

After you create a user, you can change the user's name, password, email address, and quota.

➤ **To change a user's name, password, email address, or quota:**

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. From the drop-down list at the top of the screen, select **Manage users**.
3. Click the **All** tab.

4. Do any of the following:

- To change the name of the user, edit the Name field.

The user's name is updated wherever it is used and the name of the user's private share also changes.

- To change the email address for the user, edit the Email field.

The user is notified when the account is created and when the data quota for that user is approached.

- To change the password for the user, edit the Password field.

if you want the user to be able to change his or her own password, see [Manage Users Passwords](#) on page 31.

- To change limit on the amount of total amount of data that the user can copy to the ReadyNAS system's shares, enter it in the Quota field.

The quota applies to all the system's shares. For example, if the user copies 400 MB of files to the media share and 100 MB to the user's private home share, that is a total of 500 MB towards that user's quota.

5. Click the **Apply** button.

Your settings are saved.

## *Manage Users Passwords*

You can let users choose their own passwords. Note that the ReadyNAS system administrator can always change another user's password.

➤ **To allow users to change their passwords:**

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. From the drop-down list at the top of the screen, select **Preferences**.
3. From the Allow users to change their passwords drop-down list, select **Enabled**.
4. Click the **Apply** button.

Your settings are saved.

➤ **To change a password as a user:**

1. Using a web browser, go to [http://<NAS\\_IP\\_address>/shares](http://<NAS_IP_address>/shares).

Note that <NAS\_IP\_address> is the IP address of the ReadyNAS system.

For example, if the IP address is 10.1.10.102, enter <http://10.1.10.102/shares/>.

2. If asked, log in with your user name and password.
3. Click **Password**.
4. Enter the current password, and then enter the new password twice.
5. Click the **Apply** button.

Your settings are saved.

## **Customize Private Home Shares**

If you want to use only public shares, you can disable private home shares. And if you use private home shares, you can control how to access them, where they are created, whether to use the Recycle Bin from network-attached devices that support the CIFS file-sharing protocol, and when to warn users about disk quotas.

### *Disable Private Home Shares*

If you want to use users and groups to control access to public shares, but you do not want to use private home shares, you can prevent users from accessing their private home shares.

➤ **To prevent users from accessing home shares:**

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. From the drop-down list at the top of the screen, select **Preferences**.

3. From the Private home shares for users drop-down list, select **Disabled**.

Any files in existing shares are not erased, and users can access those files if you enable home shares again.

4. Click the **Apply** button.

Your settings are saved.

### *Select Where to Create New Private Home Shares*

If you connected an external drive to your ReadyNAS system, or if you are using Flex-RAID to manage your volumes, your ReadyNAS system contains multiple volumes. You can select which volume contains the private home shares for new users.

➤ **To select where to create new home shares:**

1. From the FrontView main menu, select **Security > User & Group Accounts**.

2. From the drop-down list at the top of the screen, select **Preferences**.

3. From the Default home volume for new users drop-down list, select a volume.

When you create new users, their home shares are created on that volume. The home shares for existing users remain where they are.

4. Click the **Apply** button.

Your settings are saved.

### *Manage Private Home Shares Access*

Private home shares are automatically available with CIFS and AFP, as long as those protocols are enabled. You can also share private home shares with NFS and FTP.

➤ **To manage private home share access:**

1. From the FrontView main menu, select **Security > User & Group Accounts**.

2. From the drop-down list at the top of the screen, select **Preferences**.

3. (Optional) To let users access their home shares over NFS, from the Export home shares over NFS drop-down list, select **Enabled**.

The private home shares are not secure over NFS because you do not need to enter a user name or password to access them.

4. (Optional) To let users access their home shares over FTP, from the Make home shares available over FTP drop-down list, select **Enabled**.

5. Click the **Apply** button.

Your settings are saved.



## *Use the Recycle Bin in Private Home Shares*

You can decide whether files that users delete are immediately deleted or are moved to a Recycle Bin on the share. You can also determine when items in the Recycle Bin are permanently deleted.

This option is available only for network-attached devices that use the CIFS file-sharing protocol.

### ➤ **To use the Recycle Bin for home shares:**

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. From the drop-down list at the top of the screen, select **Preferences**.
3. From the Recycle Bin for private home shares drop-down list, select **Enabled**.
4. (Optional) To automatically delete files that have been in the Recycle Bin for a number of days, in the Remove Recycle Bin files older than this many days field, enter a number of days.
5. (Optional) To automatically delete files when the contents of the Recycle Bin reach a certain size, in the Limit Recycle Bin to this many MB field, enter a limit in megabytes.
6. Click the **Apply** button.

Your settings are saved.

## *Warn Users about Disk Quotas*

You can determine when your ReadyNAS system warns users that they are about to exceed the total amount of data they can copy to all of the ReadyNAS system's shares.

A user receives a warning only if you entered an email address for that account.

### ➤ **To select when to warn users about disk quotas:**

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. From the drop-down list at the top of the screen, select **Preferences**.
3. From the Warn user when disk quota is drop-down list, select a percentage.
4. Click the **Apply** button.

Your settings are saved.

## Manage Groups

With FrontView, you can add new groups, modify existing ones, and add users to a group.

### Add Groups

In the Add Group screen, you can add up to five groups at a time.

#### ➤ To add groups:

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. From the drop-down list at the top of the screen, select **Manage Groups**.
3. Click the **Add Group** tab.
4. For each group, follow these steps:
  - a. Enter a name for the group.
  - b. (Optional) If you want to specify a specific group ID (UID), enter a GID.  
You need to know the GID if you plan to connect to users' home shares over NFS. If you do not enter a GID, one is automatically generated.
  - c. (Optional) To set a limit on the amount of total amount of data that the primary users in this group can copy to all the ReadyNAS system's shares, enter a quota.  
When the quota is approached, the group's users and the ReadyNAS system administrator's receive an email message.
5. Click the **Apply** button.  
Your settings are saved.

### Manage Users in a Group

You can use FrontView to manage the users in a group.

#### ➤ To manage users in a group:

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. From the drop-down list at the top of the screen, select **Manage Groups**.
3. Click the **All** tab.
4. In the Secondary Members field beside the group's name, edit the list of the user names.  
Separate each user name with a comma.
5. Click the **Apply** button.  
Your settings are saved.  
  
If you enter an incorrect user name, FrontView displays a warning saying that the user was not added.

## Change a Group Name or Quota

You can change the name or disk quota assigned to existing groups.

➤ **To change a group name, group ID, or quota:**

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. From the drop-down list at the top of the screen, select **Manage Groups**.
3. Click the **All** tab.
4. (Optional) To change the name of the group, edit the Name field.
5. (Optional) To change the limit on the amount of total amount of data that the primary users in this group can copy to all the ReadyNAS system's shares, edit the Quota field.
6. Click the **Apply** button.

Your settings are saved.

## Import and Export Users

You can export and import information about the users and groups on your ReadyNAS system. This lets you transfer the users and groups from one ReadyNAS system to another. If you need to create lots of users and groups at once, you can create a text file with information about all the users and groups and import it.

For users, an export file includes this information about each user:

- User name
- Password
- Primary group
- Email address
- User ID
- Quota

For groups, an export file includes this information about each group:

- Group name
- Group ID
- Quota
- List of member names

## Export Users and Groups

### ➤ To export users:

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. From the drop-down list at the top of the screen, select **Export Users**.
3. Click **Download User List**.

The user list downloads to your web browser's downloads folder.

### ➤ To export groups:

1. From the FrontView main menu, select **Security > User & Group Accounts**.
2. From the drop-down list at the top of the screen, select **Export Group**.
3. Click **Download Group List**.

The group list downloads to your web browser's downloads folder.

## Create User and Group Files

You can create a list of users or groups in any text editor and import it to your ReadyNAS system. This is helpful if you have a long list of users or groups.

Each line in the file specifies a single user or group and contains the same fields used in the Add Users or Add Groups screen. The fields are separated by commas and spaces around the commas are ignored. If a field is blank, the default is used instead.

### User Text Files

For users, each line contains the following:

```
<user_name>, <password>, <primary_group_ID>, <email_address>, <user_ID>, <quota>
```

The user name and password are required and the other fields are optional.

For example, the following line creates the user fred with the password rock45, email address fred@example.com, a quota of 10 Mb, and sets the primary group ID and user ID to defaults:

```
fred, rock45, , fred@example.com, , 10
```

### Group Text Files

For groups, each line contains the following:

```
<group_name>, <group_ID>, <quota>, <user_1>:<user_2>:<user_3>...
```

The group name is required, and the other fields are optional. Note that user names are separated by colons instead of commas.

For example, the following line creates a group named marketing with the members maria, fred, and sam and sets the group ID and quota to defaults:

```
marketing, , , maria:fred:sam
```

## *Import Users and Groups*

### ➤ **To import users:**

1. Create a text file containing a comma-separated list of users that you want to import.
2. From the FrontView main menu, select **Security > User & Group Accounts**.
3. From the drop-down list at the top of the screen, select **Import Users**.
4. Click **Choose File**.

A dialog box displays.

5. Select the file and click the **Open** button.

The dialog box closes.

6. Click the **Import Users** button.

The specified users are added to your user list.

### ➤ **To import groups:**

1. Create a text file containing a comma-separated list of groups that you want to import.
2. From the FrontView main menu, select **Security > User & Group Accounts**.
3. From the drop-down list at the top of the screen, select **Import Groups**.
4. Click **Choose File**.

A dialog box displays.

5. Select the file and click the **Open** button.

The dialog box closes.

6. Click the **Import Groups** button.

The specified groups are added to your group list.

## Change and Recover the Admin Password

You can change the password you need to enter before you can use FrontView. You can also choose a security question to be asked if you forget the password. If you forget your password, you can visit a special website to answer the security question. If you answer correctly, a new password is emailed to the specified email address.

If you forget the password and the answer to the security question, reinstall your system's operating system to reset the password. This resets all your system's settings to their default values but does not erase any of your system's files. For more information, see the hardware manual for your system.

### ➤ To change the admin password:

1. From the FrontView main menu, select **Security > Admin Password**.
2. In the New admin password field, enter a new password.
3. In the Retype admin password field, enter the new password.
4. If you want to change the security question and answer, in the Password recovery question field, enter a new question, and in the Password recovery answer field, enter a new answer.
5. If you want to change the email address where the password is sent after you answer the security question, in the Password recovery email address field, enter a new email address.

If you need to recover your password later, you must remember the email address you entered here and enter it exactly.

6. Click the **Apply** button.

Your settings are saved.

### ➤ To recover the admin password:

1. Using a web browser, go to [http://<NAS\\_IP\\_address>password\\_recovery](http://<NAS_IP_address>password_recovery).

Note that <NAS\_IP\_address> is your ReadyNAS system's IP address. For example, if the IP address is 10.1.10.103, enter [http://10.1.10.103/password\\_recovery](http://10.1.10.103/password_recovery).

2. Enter the email address you entered when you set the password.

You must enter exactly as you did then. It is case sensitive.

3. Enter the answer to the security question.

It is case-sensitive.

4. Click **Reset password and email**.

If you entered the correct email address and answer, an email message is sent to the email address with a new password.

If you cannot remember the correct email address and answer, you can reinstall your system's operating system, which resets all the system's settings to the defaults, but does not erase any files stored on it. For more information, see the hardware manual for your system.

# 4 Store Files

---

# 4

This chapter describes how to create shares so users can store files on your ReadyNAS system, how users can access them, who can access them, and other options. This chapter also describes how users can access your shares.

This chapter includes the following topics:

- *Basic Share Concepts*
- *Manage File-Sharing Protocols*
- *Create a Share*
- *Manage Share Access*
- *Set Options for a Share*
- *Access a Share*

## Basic Share Concepts

The volume or volumes on your ReadyNAS storage system are divided into shares, which are similar to folders or directories.

### Data Organization

Shares are the way that you group your data. You might want to group your data by type, for example:

- Photos
- Music
- Videos
- Documents

Another option is to group your data by user:

- Tom
- Rick
- Mary

Organizations might choose to group data by department:

- Accounting
- Sales
- Personnel

You can combine these schemes or come up with your own scheme.

Your ReadyNAS storage system comes with two shares already created:

- backup
- media

If you want, you can delete or rename these shares. You can create other shares to organize your data.



## File-Sharing Protocols

Shares can be accessed over a network. Network access to data stored on your ReadyNAS system is managed by file-sharing protocols, which handle the transfer of data. You can access a share on your ReadyNAS from other network-attached devices (for example, a laptop or a tablet) if the share is enabled for a file-sharing protocol that the network-attached device supports. You can enable a share to support more than one file-sharing protocol.

The following table lists the file-sharing protocols that your ReadyNAS storage system supports.

**Table 2. Supported file-sharing protocols**






Protocol	Description	Recommendation
CIFS (Common Internet File Service)	Used mainly by Microsoft Windows computers and sometimes by Mac OS X computers, this protocol is enabled by default. It is sometimes referred to as the SMB (Server Message Block) file-sharing protocol.	If Windows users will access your storage system, enable this protocol.
NFS (Network File Service)	Used by Linux and Unix computers. Your ReadyNAS system supports NFS v3 over UDP and TCP.	If Linux or Unix users will access your storage system, enable this protocol.
AFP (Apple File Protocol)	Used by Mac OS 9 and Mac OS X computers. Your ReadyNAS system supports AFP 3.2.	If only Mac OS 9 and OS X users will access your storage system, enable this protocol. However, in a mixed Windows and Mac environment, NETGEAR recommends using CIFS only.
FTP (File Transfer Protocol) and FTPS (FTP with SSL encryption)	Used by many public file upload and download sites. FTPS is more secure than FTP.	If users will access your storage system using FTP, enable this protocol.
HTTP (Hypertext Transfer Protocol) and HTTPS (HTTP with SSL encryption)	Used on the Internet. HTTPS is more secure than HTTP.	If users will access your storage system from a device with a web browser, including a smart phone or tablet computer, enable this protocol.  HTTPS is enabled by default and cannot be disabled because FrontView uses HTTPS to manage your ReadyNAS system.
Rsync	Fast file-transfer protocol that uses a delta-transfer algorithm that sends only the differences between the source file and the existing file.	If users will access your storage system from a device that supports Rsync, enable this protocol.

When users access a share, it displays in their computer like a hard disk, and users can interact with it like they interact with a hard disk, depending on the access rights that are granted to the share and protocol combination.

## Access Rights

For each share you create, you can determine the access rights for each file-sharing protocol that you enable for that share. The following table lists access rights and shows the icon that FrontView uses for each access right.

**Table 3. Access rights options**

Access right	FrontView icon	Description
Disabled		No one can access this share using this protocol.
Read-only		Users can read files on this share using this protocol, but cannot edit or create files on this share using this protocol.
Read/write		Users can read, edit, and create files on this share using this protocol.
Read-only with exceptions		Unless otherwise specified, users can only read files on this share using this protocol. At least one of the following exceptions exists: <ul style="list-style-type: none"> <li>• Access to this share using this protocol is read-only and allowed only for specified hosts.</li> <li>• Access to this share using this protocol is read-only except for one or more users or groups that are granted read/write permission.</li> <li>• Access to this share using this protocol is disabled except for one or more users or groups that are granted read-only privilege.</li> </ul>
Read/write with exceptions		Unless otherwise specified, users can read, edit, and create files on this share using this protocol. At least one of the following exceptions exists: <ul style="list-style-type: none"> <li>• Access to this share using this protocol is read-only and allowed only for specified hosts.</li> <li>• Access to this share using this protocol is read-only except for one or more users or groups that are granted read/write permission.</li> <li>• Access to this share using this protocol is disabled except for one or more users or groups that are granted read-only privilege.</li> </ul>

## Manage File-Sharing Protocols

By default, the CIFS and HTTPS file-sharing protocols are enabled on your ReadyNAS storage system. If users access a share with another protocol, enable it in the Standard File Protocols screen, which is shown in the following figure.

Select the file sharing protocol you wish to enable. In general, disable the protocols you do not intend to use. You can always enable them later. Click **Help** for more information.

**CIFS**, or Common Internet File System, used predominantly by Windows. Mac OS X also supports this protocol though it may be referred to as SMB.

**NFS**, or Network File System, widely used in Unix or Linux environments. Mac OS X also supports this protocol.
 

Select number of nfs threads:

**AFP**, or Apple Filing Protocol, popular in Mac environments. AFP provides better support for a larger range of characters in filenames and is preferred where this is important.
 

Advertise AFP service over Bonjour  
 Advertise AFP service over AppleTalk

**FTP**, or File Transfer Protocol, used extensively for basic file upload and downloads. If you will be making FTP service available to this device outside the firewall, you can specify a custom port for added security.
 

Port:   
 Authentication mode:   
 Allow upload resumes:   
 Passive ports:  -   
 Masquerade as:

**HTTP**, or Hypertext Transfer Protocol, used everywhere web browsers exist. Default access to the ReadyNAS over HTTP will show a share list. If you want to use the ReadyNAS as a web server, you can specify a share where access will be redirected and you can enable or disable login authentication to that share. Please keep in mind that you will only be allowed to redirect to a share that is set up for **read-only** access over HTTP.
 

Redirect default web access to this share:   
 Login authentication on this share:

**HTTPS**, or HTTP with SSL encryption, used where secure web access is desired. If you will be making HTTPS service available to this device outside the firewall, you can specify an additional port for this purpose for added security.
 

Port 1:   
 Port 2:   
 SSL key host:

**Rsync**, a popular incremental backup protocol used in Unix and Linux environments.

Figure 3. Standard File Protocol screen

For best performance, enable only those file-sharing protocols that you use. For example, if you do not use Linux or Unix computers to transfer files to and from your ReadyNAS system, disable the NFS file-sharing protocol. Disabling file-sharing protocols that you do not use maximizes system memory and improves system performance.

➤ **To enable or disable the CIFS file-sharing protocol:**

1. From the FrontView main menu, select **Services > Standard File Protocols**.
2. Select or clear the **CIFS** check box.
3. Click the **Apply** button.

Your changes are saved.

➤ **To enable or disable the NFS file-sharing protocol:**

1. From the FrontView main menu, select **Services > Standard File Protocols**.
2. Select or clear the **NFS** check box.
3. (Optional) If access to NFS shares is slow, adjust the NFS thread count.
4. Click the **Apply** button.

Your changes are saved.

➤ **To enable or disable the AFP file-sharing protocol:**

1. From the FrontView main menu, select **Services > Standard File Protocols**.
2. Select or clear the **AFP** check box.
3. (Optional) If you are enabling the AFP file-sharing protocol, choose how to advertise the shares available over AFP:
  - If Mac computers using Mac OS X v10.1 or earlier are accessing the share, select **Advertise AFP service over AppleTalk**.
  - If Mac computers using Mac OS X v10.2 or later are accessing the share, Select **Advertise AFP service over Bonjour**.
4. Click the **Apply** button.

Your changes are saved.

➤ **To enable or disable the FTP file-sharing protocol:**

1. From the FrontView main menu, select **Services > Standard File Protocols**.
2. Select or clear the **FTP** check box.
3. If you are enabling the FTP file-sharing protocol, manage the following options:
  - **Authentication mode.** If you want to allow only anonymous access to all FTP shares, from the Authentication mode drop-down list, select **Anonymous**. Users can log in only by using ‘anonymous’ as their user name and their email address as the password. Users cannot log in with their user names.

If you want users to log in with their user names and passwords, from the Authentication mode drop-down list, select **User**.

- **Upload resumption.** If uploads sometimes fail before they finish, from the Allow upload resumes drop-down list, select **Enabled**. If you lose your connection to the ReadyNAS system during an upload, log in to the FTP share again, start the upload, and it continues from where it left off.
4. Click the **Apply** button.  
Your changes are saved.

➤ **To enable or disable the HTTP file-sharing protocol:**

1. From the FrontView main menu, select **Services > Standard File Protocols**.
2. Select or clear the **HTTP** check box.
3. (Optional) If you are enabling the HTTP file-sharing protocol, set the following options:
  - **Redirect default Web access to this share.** Select a share from this drop-down list if you want to automatically redirect `http://<ReadyNAS_IP_address>` to that share. This is useful if you do not want to expose your default share listing to outsiders. To redirect to a share, create an index file (such as `index.htm` or `index.html`) in your target share and enable the HTTP protocol for read-only access to that share.
  - **Login authentication on this share.** Specifies whether or not authentication is required if users are browsing to the user-created web content on this share.

4. Click the **Apply** button.  
Your changes are saved.

➤ **To enable or disable the Rsync file-sharing protocol:**

1. From the FrontView main menu, select **Services > Standard File Protocols**.
2. Select or clear the **Rsync** check box.
3. Click the **Apply** button.

Your changes are saved.

## Create a Share

You can use FrontView to create a share.

### Create a Share with the User or Domain Security Mode

With the user or domain security mode, you can create a share with just a name.

➤ **To create a share under the user or domain security mode:**

1. From the FrontView main menu, select **Shares > Add Shares**.

You can create up to five new shares at once. For each share, follow these steps:

- a. In the Name and Description fields, enter a name and description for the share.
- b. To let anyone access the share by connecting to it as a guest, select **Public access**.

2. Click the **Apply** button.

The specified shares are created. Anyone on a Mac or Windows PC who has an account on the ReadyNAS system can read, write, and create files on the share. If you select public access for a share, anyone who connects to that share as a guest can read, write, and create files on the share.

### Create a Share with the Share Security Mode

With the share security mode, you can create a share with a name, a password, and a limit on the amount of data it can contain. The share security mode is available only on some versions of ReadyNAS NV+ and 1100 storage systems. This security mode is deprecated because it is not supported by Windows 7 or later and Mac OS X v10.6 or later.

➤ **To create a share under the share security mode:**

1. From the FrontView main menu, select **Shares > Add Shares**.

You can create up to five new shares at once. For each share, follow these steps:

- a. in the Name and Description fields, enter a name and description for the share.
- b. To secure your share, enter a password.

If you leave the **Password** field blank, any user can access the share without entering a password.

- c. To set a limit on the amount of data that the share can contain, enter a quota.

When the amount of data stored on the share approaches the quota, the ReadyNAS system's administrator receives a warning email message.

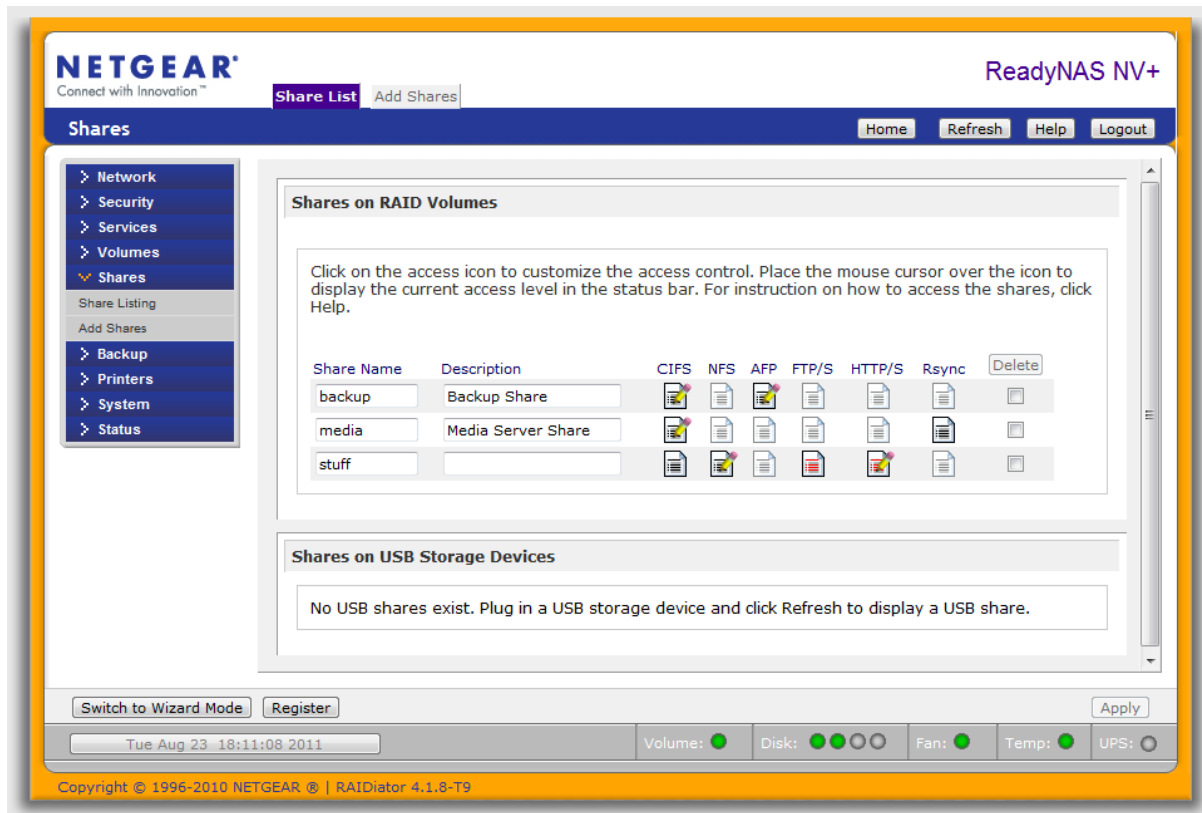
If you set quota to zero, no quota is enforced.

2. Click the **Apply** button.

The specified shares are created. Anyone on a Mac or Windows computer who has the share's password can read, write, and create files on the share.

## Manage Share Access

Use FrontView's Share Listing screen, which is shown in the following figure, to choose who can access your shares.



**Figure 4. Share Listing screen**

After you create a share, it is available to some users by default. If you use the user or domain security mode, it is available to all Windows and Mac users who have an account on your ReadyNAS system. If you use the share security mode, the share is available to anyone with the share's password.

To make a share available to other users, determine what type of devices they are likely to use to access the share, and then make the share available over the appropriate file-sharing protocol or protocols.

For more information, see [File-Sharing Protocols](#) on page 41.

A share can have different access rights for each file-sharing protocol that it is enabled for it. To change the access rights for a share, click the icon that is under the file-sharing protocol that you want to use to share it. When you specify what type of access to give users, you have three choices:

- **No access.** A user cannot read, edit, or create files on the share.
- **Read-only access.** A user can only read files, and cannot edit or create files.
- **Read/write access.** A user can read, edit, and create files.

For more information, see [Access Rights](#) on page 42.

## Manage Share Access with the User or Domain Security Mode

With the user or domain security mode, you can specify which users can access a share and what kind of access they can have. You can specify who can access it with users and groups you create, as described in [Manage Users and Groups](#) on page 29.

### Select Who Can Access a Share Using CIFS with the User Mode

If users access your share with CIFS, you have these choices for security:

- If your ReadyNAS system is on a small local network and you can trust everyone on the network, you can let anyone on the network access the share.
- If you need more security, you can specify that only users with accounts on your ReadyNAS server can access the share, and give them all the same level of access.
- If you need more flexibility, you can specify which users can access the share, and what type of access each can have.
- For the most security, you can specify that a user must be at a specific computer to access the share. If that computer is in a locked room, users must know the correct user name and password and they need a key to the room.

To specify a computer, you use its IP address, for example, 10.1.10.104.

#### ➤ To let anyone access your share using CIFS:

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for CIFS.

If FrontView does not display an icon for CIFS, you need to enable this file-sharing protocol on your ReadyNAS system. For more information, see [Manage File-Sharing Protocols](#) on page 43.

3. From the Default Access drop-down list, select the access to give anyone who can access your share.
4. In the Share Access Restrictions pane, select the **Allow guest access** check box.
5. Click the **Apply** button.

If a user connects to your share as a guest, that user has the access specified in the Default Access drop-down list.



➤ **To let anyone with a ReadyNAS account access your share using CIFS:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for CIFS.

If FrontView does not display an icon for CIFS, you need to enable this file-sharing protocol on your ReadyNAS system. For more information, see [Manage File-Sharing Protocols](#) on page 43.

3. From the Default Access drop-down list, select the access to give anyone who can access your share.
4. Click the **Apply** button.

Anyone with an account on your ReadyNAS can connect to the share with a user name and password, and the user has the access specified in the Default Access drop-down list.

➤ **To specify which users can access a share using CIFS:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for CIFS.

If FrontView does not display an icon for CIFS, you need to enable this file-sharing protocol on your ReadyNAS system. For more information, see [Manage File-Sharing Protocols](#) on page 43.

3. Determine which users can access the share, as follows:
  - To give some users read/write access and give all other users read-only access, follow these steps:
    - a. From the Default Access drop-down list, select **Read-only**.
    - b. In the Share Access Restrictions pane, select the **Write-enabled users** check box.
    - c. In the Write-enabled users field and the Write-enabled groups field, enter the names of users and groups to whom you want to grant read/write access.
  - To give some users read-only access and give all other users read/write access, follow these steps:
    - a. Select **Read/write** from the Default Access drop-down list.
    - b. In the Share Access Restrictions pane, select the **Read-only users** check box.
    - c. In the Read-only users field and the Read-only groups field, enter the names of users and groups to whom you want to grant read-only access.
  - To give some users read-only access, give some users read/write access, and give all other users no access, follow these steps:
    - a. Select **Disabled** from the Default Access drop-down list.
    - b. In the Share Access Restrictions pane, select the **Read-only users** check box.
    - c. In the Read-only users field and the Read-only groups field, enter the names of users and groups to whom you want to grant read-only access.

- d. Select the **Write-enabled users** check box.
  - e. In the Write-enabled users field and the Write-enabled groups field, enter the names of users and groups to whom you want to grant read/write access.
4. Click the **Apply** button.

If a user name is specified in the Read-only users, Read-only groups, Write-enabled users, or Write-enabled groups fields, that user has that access to the share. If a user is not specified in one of those fields, the user has the access specified in the Default Access drop-down list.

➤ **To specify which computers can access a share using CIFS:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for CIFS.

If FrontView does not display an icon for CIFS, you need to enable this file-sharing protocol on your ReadyNAS system. For more information, see [Manage File-Sharing Protocols](#) on page 43.

3. In the Share Access Restrictions pane, select the **Hosts allowed access** check box.
4. Enter a comma-separated list of IP addresses for the computers that you want to grant access rights.
5. Click the **Apply** button.

Users at other computers cannot access the share, even if their user name or group is listed in another field.

### **Select Who Can Access a Share Using AFP with the User Security Mode**

If users access your share with AFP, you have these choices for security:

- If your ReadyNAS system is on a small local network and you can trust everyone on the network, you can let anyone on the network access the share.
- If you need more security, you can specify which users can access the share and what type of access they can have.
- If you need more flexibility, you can specify which users can access the share, and what type of access each can have.

➤ **To let anyone access a share using AFP:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for AFP.

If FrontView does not display an icon for AFP, you need to enable this file-sharing protocol on your ReadyNAS system. For more information, see [Manage File-Sharing Protocols](#) on page 43.

3. From the Default Access drop-down list, select the access to give anyone who can access your share.

4. Select the **Allow guest access** check box.
5. Click the **Apply** button.

If a user connects to your share as a guest, that user has the access specified in the Default Access drop-down list.

➤ **To let anyone with a ReadyNAS account access a share using AFP:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for AFP.

If FrontView does not display an icon for AFP, you need to enable this file-sharing protocol on your ReadyNAS system. For more information, see [Manage File-Sharing Protocols](#) on page 43.

3. From the Default Access drop-down list, select the access to give anyone who can access your share.
4. Click the **Apply** button.

Anyone with an account on your ReadyNAS system can connect to the share with a user name and password, and the user has the access specified in the Default Access drop-down list.

➤ **To select who can access a share using AFP:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for AFP.

If FrontView does not display an icon for AFP, you need to enable this file-sharing protocol on your ReadyNAS system. For more information, see [Manage File-Sharing Protocols](#) on page 43.

3. Determine which users can access the share, as follows:
  - To give some users read/write access and give all other users read-only access, follow these steps:
    - a. From the Default Access drop-down list, Select **Read-only**.
    - b. In the Share Access Restrictions pane, select the **Write-enabled users** check box.
    - c. In the Write-enabled users field and the Write-enabled groups field, enter the names of users and groups to whom you want to grant read/write access.
  - To give some users read-only access and give all other users read/write access, follow these steps:
    - a. From the Default Access drop-down list, Select **Read/write**.
    - b. In the Share Access Restrictions pane, select **Read-only** users.
    - c. In the Read-only users field and the Read-only groups field, enter the names of users and groups to whom you want to grant read-only access.

- To give some users read-only access, give other users read/write access, and give all other users no access, follow these steps:
  - a. From the Default Access drop-down list, Select **Disabled**.
  - b. In the Share Access Restrictions pane, select the **Read-only users** check box.
  - c. In the Read-only users field and the Read-only groups field, enter the names of users and groups to whom you want to grant read-only access.
  - d. In the Share Access Restrictions pane, select the **Write-enabled users** check box.
  - e. In Write-enabled users field and the Write-enabled groups field, enter the names of users and groups to whom you want to grant read/write access.
- 4. Click the **Apply** button.

If a user name is specified in the Read-only users, Read-only groups, Write-enabled users, or Write-enabled groups fields, that user has that access to the share. If a user name is not specified in one of those fields, the user has the access specified in the Default Access drop-down list.

### **Select Who Can Access a Share Using NFS with the User Security Mode**

If users access your share with NFS, you can specify which computers have access to it, and what type of access each one has.

To specify a computer, you use its IP address, for example, 10.1.10.104.

#### ➤ **To select which computers access a share using NFS:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for NFS.

If FrontView does not display an icon for NFS, you need to enable this file-sharing protocol on your ReadyNAS system. For more information, see [Manage File-Sharing Protocols](#) on page 43.

3. Determine which computers can access the share, as follows:
  - To give some computers read/write access and give all other computers read-only access, follow these steps:
    - a. From the Default Access drop-down list, select **Read-only**.
    - b. In the Share Access Restrictions pane, select the **Write-enabled hosts** check box and enter the IP addresses for the computers that you want to have read/write access.
  - To give some computers read-only access and give all other computers read/write access, follow these steps:
    - a. Select **Read/write** from the Default Access drop-down list.
    - b. In the Share Access Restrictions pane, select the **Read-only hosts** check box and enter the IP addresses for the computers that you want to have read-only access.

- To give some computers read-only access, give some computers read/write access, and give all other computers no access, follow these steps:
  - a. From the Default Access drop-down list, select **Disabled**.
  - b. In the Share Access Restrictions pane, select the **Read-only hosts** check box and enter the IP addresses for the computers that you want to have read-only access.
  - c. In the Share Access Restrictions pane, select the **Write-enabled hosts** check box and enter the IP addresses for the computers that you want to have read/write access.
- 4. Click the **Apply** button.

If a computer is specified in the Read-only hosts or Write-enabled hosts fields, users at that computer have that access to the share. If a computer is not specified in one of those fields, users at that computer have the access specified in the Default Access drop-down list.

### *Select Who Can Access a Share Using FTP with the User Security Mode*

If users access your share with FTP, you have these choices for security:

- If your ReadyNAS system is on a small local network and you can trust everyone on the network, you can let anyone on the network access the share anonymously.
- If you need more security, you can specify which users can access the share and what type of access they can have.
- For the most security, you can specify that a user must be at a specific computer to access the share. If that computer is in a locked room, users must know the correct user name and password and they need a key to the room.

To specify a computer, you use its IP address, such as 10.1.10.104.

#### ➤ **To let anyone access a share anonymously using FTP:**

1. From the FrontView main menu, select **Services > Standard File Protocols**.
2. Select the **FTP** check box if it is not already selected.
3. From the Authentication mode drop-down list, select **Anonymous**.
4. From the FrontView main menu, select **Shares > Share Listing**.
5. To the right of the share you want to change, click the icon for FTP/S.
6. From the Default Access drop-down list, select the access to give anyone who can access your share.
7. Click the **Apply** button.

Anyone can connect to the share and the user has the access specified in the Default Access drop-down list.

➤ **To select who can access a share using FTP:**

1. From the FrontView main menu, select **Services > Standard File Protocols**.
2. Select the **FTP** check box if it is not already selected.
3. From the Authentication mode drop-down list, choose **User**.
4. From the FrontView main menu, select **Shares > Share Listing**.
5. To the right of the share you want to change, click the icon for FTP/S.
6. Determine which computers can access the share, as follows:
  - To give some users read/write access and give all other users read-only access, follow these steps:
    - a. From the Default Access drop-down list, select **Read-only**.
    - b. In the Share Access Restrictions pane, select the **Write-enabled hosts** check box.
    - c. In the Write-enabled users field and the Write-enabled groups field, enter the user names and group names to whom you want to grant read/write access.
  - To give some users read-only access and give all other users read/write access, follow these steps:
    - a. From the Default Access drop-down list, select **Read/write**.
    - b. In the Share Access Restrictions pane, select the **Read-only hosts** check box.
    - c. In the Read-only users field and the Read-only groups field, enter the user names and group names to whom you want to grant read/write access.
  - To give some computers read-only access, give some computers read/write access, and give all other computers no access, follow these steps:
    - a. From the Default Access drop-down list, Select **Disabled**.
    - b. In the Share Access Restrictions pane, select the **Write-enabled hosts** check box.
    - c. In the Write-enabled users field and the Write-enabled groups field, enter the IP addresses of the computers that you want to have read/write access.
    - d. In the Share Access Restrictions pane, select the **Read-only hosts** check box.
    - e. In the Read-only users field and the Read-only groups field, enter the IP addresses of the computers that you want to have read/write access.
7. Click the **Apply** button.

If a user name is specified in the Read-only users, Read-only groups, Write-enabled users, or Write-enabled groups fields, that user has that access to the share. If a user name is not specified in one of those fields, the user has the access specified in the Default Access drop-down list.

➤ **To select which computers can access a share using FTP:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for FTP/S.

If FrontView does not display an icon for FTP, you need to enable this file-sharing protocol on your ReadyNAS system. For more information, see [Manage File-Sharing Protocols](#) on page 43.

3. To specify that users must be at a specific computer before they have read-only access to the share, follow these steps:
  - a. In the Share Access Restrictions pane, select the **Read-enabled hosts** check box.
  - b. In the Read-enabled hosts field, enter a comma-separated list of the IP addresses of the computers.

Users at other computers cannot access the share, even if their user names or groups are listed in another field.

4. To specify that users must be at a specific computer before they have read/write access to the share, follow these steps:
  - a. In the Share Access Restrictions pane, select the **Write-enabled hosts** check box.
  - b. In the Write-enabled hosts field, enter a comma-separated list of the network addresses for the computers

Users at other computers cannot access the share, even if their user names or groups are listed in another field.

5. Click the **Apply** button.

If a computer is specified in the Read-only hosts or Write-enabled hosts fields, users at that computer have that access to the share. If a computer is not specified in one of those fields, users at that computer cannot access the share.

### **Select Who Can Access a Share Using HTTP with the User Security Mode**

If users access your share with HTTP, you have these choices for security:

- If your ReadyNAS system is on a small local network and you can trust everyone on the network, you can let anyone on the network access the share.
- If you need more security, you can specify which users can access the share and what type of access they can have. Every user has the same type of access.
- For the most security, you can specify that a user must be at a specific computer to access the share. If that computer is in a locked room, users must know the correct user name and password and they need a key to the room.

To specify a computer, you use its IP address, for example, 10.1.10.104.

➤ **To select which users can access a share using HTTP:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for HTTP/S.
3. From the Default Access drop-down list, select the type of access you want to give users, as follows:
  - To let users read files on the share, without being able to edit or create files, select **Read-only** from the drop-down list.
  - To let users read, edit, and create files, select **Read/write**.
  - To prevent users from accessing the share using the protocol, select **Disabled**.
4. In the Share Access Restrictions pane, choose the users to whom you want to grant access rights as specified in the Default Access drop-down list.
  - To give all users the access specified in the Default Access drop-down list, clear the **Hosts allowed access** check box.
  - To give only some users the access specified in the Default Access drop-down list, follow these steps:
    - a. Select the **Hosts allowed access** check box.
    - b. To specify that users must be at specified computers to access the share, in the Hosts allowed access field, enter a comma-separated list of the IP addresses for the computers.

Users at other computers cannot access the share, even if their user names or groups are listed in another field.
    - c. In the Users allowed access field and the Groups allowed access field, enter the user names and group names
5. Click the **Apply** button.

Your settings are saved.

### ***Select Who Can Access a Share Using Rsync with the User or Domain Security Modes***

You can determine access rights, restrict access to specific users or computers, and password-protect share access using the Rsync file-sharing protocol.

➤ **To select which users can access a share using Rsync:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share you want to change, click the icon for Rsync.
3. From the Default Access drop-down list, select the type of access you want to give users, as follows:
  - To let users read files on the share, without being able to edit or create files, select **Read-only**.
  - To let users read, edit, and create files, select **Read/write**.
  - To prevent users from accessing the share using the protocol, select **Disabled**.



4. In the Share Access Restrictions pane, select which users you want to have the access rights specified in the Default Access drop-down list, as follows:
  - To give all users that access, clear the **Hosts allowed access** check box.
  - To give only some users that access, select the **Hosts allowed access** check box and enter the IP addresses for the users' computers.
5. In the Rsync Password Options pane, enable or disable password protection for Rsync share access, as follows:
  - To enable password protection, select the **Enable password protection** check box and create at least one Rsync user account and password. You can create a maximum of two Rsync user accounts and passwords for each share. These credentials are completely separate from your ReadyNAS storage system's user accounts.
  - To disable password protection, clear the **Enable password protection** check box.
6. Click the **Apply** button.

Your settings are saved.

## Manage Share Access with the Share Security Mode

To choose who can access a share with the share security mode, you need to specify what type of access users to give users. You can also specify that only users at specified computers can access a share.

### *Manage Share Access Using CIFS, HTTP, or Rsync with the Share Security Mode*

When you enable the CIFS, HTTP, or Rsync file-sharing protocols, you determine what type of access you want to give users, and then determine whether to give that access to all users or just users at specific computers.

- **To select which computers can access a share with CIFS, HTTP, or Rsync:**
  1. From the FrontView main menu, select **Shares > Share Listing**.
  2. To the right of the share you want to change, click the icon for the file-sharing protocol.
  3. From the Default Access drop-down list, select the type of access you want to give users, as follows:
    - To give users read-only access, select **Read-only**.
    - To give users read/write access, select **Read/write**.
    - To prevent users from accessing the share using the selected protocol, select **Disabled**.

4. In the Share Access Restrictions pane, select which users to whom you want to grant the access rights specified in the Default Access drop-down list.
  - To give all users that access, clear the **Hosts allowed access** check box.
  - To give only some users that access, select the **Hosts allowed access** check box and enter a comma-separated list of the IP addresses for the users' computers.
5. Click the **Apply** button.

Your settings are saved.

### *Select Who Can Access a Share Using AFP With the Share Security Mode*

When you enable the AFP file-sharing protocol for a share, you determine what type of access to give all users.

- **To select which computers can access a share with AFP:**
1. From the FrontView main menu, select **Shares > Share Listing**.
  2. To the right of the share you want to change, click the icon for AFP.
  3. From the Default Access drop-down list, select the type of access you want to give all users, as follows:
    - To give all users read-only access, select **Read-only**.
    - To give all users read/write access, select **Read/write**.
    - To prevent all users from accessing the share over AFP, select **Disabled**.
  4. Click the **Apply** button.

Your settings are saved.

### *Select Who Can Access a Share Using FTP or NFS with the Share Security Mode*

When you enable the FTP or NFS file-sharing protocols for a share, you determine what type of access to grant most people, then specify that people at specific computers can have a different type of access.

- **To choose which computers can access a share Using FTP and NFS:**
1. From the FrontView main menu, select **Shares > Share Listing**.
  2. To the right of the share you want to change, click the icon for the file-sharing protocol.
  3. From the Default Access drop-down list, select the type of access you want to grant most users, as follows:
    - To give users read-only access, select **Read-only**.
    - To give users read/write access, select **Read/write**.
    - To prevent users from accessing the share using the protocol, select **Disabled**.

4. Enter exceptions in the Share Access Restrictions pane, as follows:
  - To specify computers that can have read-only access, select the **Read-only hosts** check box and enter IP addresses in the field.
  - To specify computers that can have read/write access, select the **Write-enabled hosts** check box and enter the IP addresses in the field.
5. Click the **Apply** button.  
Your settings are saved.

## Set Options for a Share

You can set many options for your shares. For example, you can choose whether to hide a share from users who cannot access it, whether the share should use the Recycle Bin, and how to optimize access. You can also reset the access permissions for the files on a share if they become corrupted.

### Hide a Share

Even if users cannot see what is in a share, they can still see its name in server listings in Mac OS X Finder and Windows Explorer. If you want to hide a share completely, you can prevent it from appearing in listings, and users must enter its full path name to access it.

After you select this option, file sharing protocols that do not support hiding are disabled for this share, including AFP.

#### ➤ To hide a share:

1. From the FrontView main menu, select **Shares > Share Listing**.
2. Click the icon for CIFS.
3. In the Share Display Option pane, select **Hide this share**.
4. Click the **Apply** button.

Your settings are saved.

### Use the Recycle Bin on CIFS Shares

You can determine whether files that users delete are immediately deleted or are moved to a Recycle Bin on the share. You can also determine when items in the Recycle Bin are permanently deleted.

When you delete a file from a share on a network-attached device using the CIFS protocol, the file is moved to the Recycle Bin folder that is located on the share. To see a share's deleted files, open the share's Recycle Bin folder.

This option is available only when you connect to the share using the CIFS file-sharing protocol, and it also applies to private home shares that are accessed using CIFS.

➤ **To enable the Recycle Bin:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. Click the icon for CIFS.
3. In the Recycle Bin pane, select the **Enable Recycle Bin** check box.
4. To automatically delete files that have been in the Recycle Bin for a number of days, in Remove files older than field, enter a number of days.
5. To automatically delete files when the contents of the Recycle Bin reach a certain size, in Limit Recycle Bin to field, enter a number of megabytes.
6. Click the **Apply** button.

Your settings are saved.

## Cache Files Locally Using CIFS

When a share is shared with CIFS, you can cache the share's files locally, so it is quicker to access frequently used files. This is called opportunistic locking or oplocks. Do not enable this option if any of your shares contains a file that is accessed by multiple users at once, such as a QuickBooks database.

➤ **To cache files locally when using a CIFS share:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. Click the icon for CIFS.
3. In the Opportunistic Locking pane, select the **Enable Oplocks for this share** check box.
4. Click the **Apply** button.

Your settings are saved.

## Enable Syncing Using NFS

If you frequently lose the connection to an NFS server, you can enable syncing so you are less likely to lose data. When you enable syncing, each write request is committed to disk before the NFS client acknowledges that the write request finishes. If you are not experiencing problems with lost connections, disable syncing to speed data transfers.

➤ **To enable syncing when using an NFS share:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. Click the icon for NFS.
3. In the Advanced NFS Options pane, select the **Enable sync mode** check box.
4. Click the **Apply** button.

Your settings are saved.

## Set Permissions for New Files and Folders

The permission for newly created files is read/write for the owner and owner's primary group and read-only for everyone else. The permissions for newly created folders is read/write for everyone. If the default does not satisfy your security requirement, you can change it here.

You can choose set permissions for new files and folders for shares available over CIFS or AFP.

The options available in FrontView vary based on the security mode you select for your ReadyNAS system.

### ➤ To set permissions for new files and folders on a CIFS share:

1. From the FrontView main menu, select **Shares > Share Listing**.
2. Click the icon for CIFS.
3. (Optional) In the Advanced CIFS Permission pane, select the **Automatically set permissions on new files and folders** check box.
4. (Optional) Select the **Do not allow ACL settings to be more restrictive than this** check box.

Be careful when using this option. It can change file and folder access rights in unexpected ways.

5. (Optional) To choose group permission settings for new files, use the Group rights and Everyone rights drop-down lists, as follows:
  - From the Group rights drop-down list, select the permission right for members of the file owner's primary group.
  - From the Everyone rights drop-down list, select the permission right for everyone not in the file owner's primary group.
6. (Optional) To choose group permission settings for new folders, use the Group rights and Everyone rights drop-down lists, as follows:
  - From the Group rights drop-down list, select the permission right for members of the file owner's primary group.
  - From the Everyone rights drop-down list, select the permission right for everyone not in the file owner's primary group.

7. Click the **Apply** button.

Your settings are saved.

### ➤ To set permissions for new files and folders on an AFP share:

1. From the FrontView main menu, select **Shares > Share Listing**.
2. Click the icon for AFP.
3. In the Advanced AFP Permission pane, select **Automatically set permissions on new files and folders**.

4. (Optional) To choose group permission settings for new files, use the Group rights and Everyone rights drop-down lists as follows:
  - From the Group rights drop-down list, select the permission right for members of the file owner's primary group.
  - From the Everyone rights drop-down list, select the permission right for everyone not in the file owner's primary group.
5. (Optional) To choose group permission settings for new folders, use the Group rights and Everyone rights drop-down lists as follows:
  - From the Group rights drop-down list, select the permission right for members of the file owner's primary group.
  - From the Everyone rights drop-down list, select the permission right for everyone not in the file owner's primary group.
6. Click the **Apply** button.  
Your settings are saved.

## Broaden Rename and Delete Privileges

By default, only a file's owner, that is, the person who created it, can delete or rename it. However, you can allow anyone with read/write access to the share to delete or rename files in it.

### ➤ To broaden rename and delete privileges:

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share for which you want to change privileges, click the icon for any protocol.
3. Click the **Advanced Options** tab.
4. Select the **Grant rename and delete privileges to non-owners of files** check box.
5. Click the **Apply** button.  
Your settings are saved.

## Reset Ownership and Permissions On Any Share

If the ownership and permission settings on a share become corrupt and users cannot access or create files, you might need to reset the ownership and permissions for all the files on that share. Changing the security mode on a ReadyNAS NV+ or 1100 from Share to User is a common way to cause ownership and permission problems.

Resetting the ownership and permissions for a share is a lengthy process that can have unexpected consequences. Users might not be able to create or view files if you do this incorrectly. The values you set here override the values set for the file-sharing protocols.

Before you try this procedure, make sure users are logging in to the share with the correct user name and password and that their access rights are set correctly.

➤ **To reset ownership and permissions for files and folders on any share:**

1. From the FrontView main menu, select **Shares > Share Listing**.
2. To the right of the share for which you want to reset ownership or permissions, click the icon for any protocol.
3. Click the Advanced Options tab.
  
4. To change the owner and permission rights for the share's files, do any of the following:
  - To set the owner for files on the share, in the Share folder owner field, enter the user name.
  - To set the primary group for files on the share, in Share folder group, enter the group name.
  - To set access rights for the files' owner, from the Share folder owner rights drop-down list, select an access right option.
  - To set access rights for the files' owner's group, from the Share folder group rights drop-down list, select an access right option.
  - To set access rights for everyone not in the owner's group, from the Share folder everyone rights drop-down list, select an access right option.

If you are not sure how to set these fields, create a new share, and use the new share's settings for the original share, with one exception: If the share folder owner of the new share is the same as the share's name, use the name of the original share as the Share Folder Owner for the original share. You can delete the new share when you finish.

5. Select the **Set ownership and permission for existing files and folders** check box.

Depending on the number of files on the share, this operation can take a long time to finish. This check box clears when the operation finishes.
6. Click the **Apply** button.

Your settings are saved.

## Access a Share

Depending on how you set up your share, you can access it from many different kinds of devices. Not only can you access it from a Mac, Windows, UNIX, or Linux device, you can also access it from any device with a web browser, including smart phones and tablet computers. You can even access a share when you are not using the same local network as the ReadyNAS system.

### Access a Share from a Windows Device

Your ReadyNAS system's CIFS shares display in Windows Explorer.

➤ **To access a share from a Windows device as a guest:**

In the address bar of a Windows Explorer window, enter the IP address of your ReadyNAS system.

➤ **To access a share from a Windows device as a user:**

1. Select **Map Network Drive**.

The location of this option varies depending on what version of Windows you are running. See the documentation that came with your operating system.

2. Select a letter for the drive.

3. Click **Browse** and select the share.

4. If asked, enter your user name and password.

The share appears in the Windows Explorer window.

### Access a Share from a Mac OS X Device

If your ReadyNAS system has CIFS or AFP shares, the system displays in the sidebar of a Finder window. Click the ReadyNAS system. You can connect to it like you connect to any other server.

➤ **To access a share from a Mac OS X device:**

1. Select **Go > Network** to view a list of all network servers.

2. Double-click your ReadyNAS system.

3. If you are asked for a password, do one of the following:

- If you are using the share security mode, enter the name of the share as the user name and then enter the share's password.
- If you are using the user or domain security mode, enter your user name and password and click **Connect**.



## Access a Share From a UNIX or Linux Device

From a UNIX or Linux computer, you can access any share on your ReadyNAS system that is available over NFS.

### ➤ To access a share from a UNIX or Linux device:

Enter the following command:

```
mount <IP_address>:/<share_name> <share_name>
```

<IP\_address> is the IP address of your ReadyNAS system and <share\_name> is the name of the share you want to access. For example, if your ReadyNAS system's IP address is 10.1.10.103 and the share you want to access is named media, enter:

```
mount 10.1.10.103:/media media
```

## Access a Share Using FTP

With any FTP client application or program, you can access any share on your ReadyNAS system that is available over FTP. If you set the FTP authentication mode to user, log in with your user name and password. If you set the authentication mode to anonymous, use anonymous as your user name and use your email address as your password.

## Access a Share Using a Web Browser

If your share is available over HTTP or HTTPS, you can access it from any device with a web browser, including smart phones and tablet computers. You can view and download the files on a share. And if you have read/write access, you can also upload, delete, edit, and move files.

### ➤ To access a share with a web browser:

1. In a web browser, enter the URL for your ReadyNAS system.
2. If you are asked for a user name and password, enter them.
3. To view a share's contents in another window, click it.
4. If you have read-only access to the share, you can view or download files by clicking them.

If you have read/write access to the share, you can do any of the following:

- To download a file, click it.
- To upload a file to the server, click **Upload**. In the dialog box that displays, click **Choose File**, select the file, and then click **Upload**.
- To delete files, click the check boxes beside the files and then click **Delete**.
- To rename a file, click the check box beside the file, click **Rename**, and enter the new name.
- To edit a text file, click the check box beside the file and then click **Edit**.
- To create a new text file, click **New File**. In the dialog box that displays, enter a name for the file. In the next dialog box, enter the file's contents and then click **Save**.

- To create a new directory, click **New Directory** and then enter the name of the directory.
- To copy files to a new location, click the check boxes beside the files and then click **Copy**. Open the directory where you want to move the files, and then click **Paste**.
- To move files to a new location, click the check boxes beside the files and then click **Cut**. Open the directory where you want to move the files, and then click **Paste**.

## Access a Share Using ReadyNAS Remote

ReadyNAS Remote lets you access your ReadyNAS system's shares no matter where you are with your Mac or Windows computer, or an Android phone, iPhone, iPad, or iPod Touch. For example, you can edit your documents at your office when you are home, or read a file stored at home while you are away.

Before you can remotely access a share from any device, you must install ReadyNAS Remote on your computer and enable ReadyNAS Remote on your ReadyNAS system.

Before you can remotely access a share from Mac OS X or Windows devices, you must ensure that you can access the share over CIFS ([Select Who Can Access a Share Using CIFS with the User Mode](#) on page 48).

Before you can remotely access a share from an iPhone, iPad, or iPod Touch, you must ensure that you can access it over FTP ([Select Who Can Access a Share Using FTP with the User Security Mode](#) on page 53).

### ➤ To install ReadyNAS Remote on your computer:

1. Download ReadyNAS Remote software for your computer or device, and install it.

If you have a Mac or Windows computer, download the software at <http://remote.readynas.com/download.html>.

If you have an Android phone, iPhone, iPad, or iPod Touch, download the software from the Android Market or Apple's App Store.

You can access your ReadyNAS system remotely with an Android phone, iPhone, iPad, or iPod Touch, but you cannot create a new account from one.

2. If ReadyNAS Remote does not launch automatically when you download it, manually launch it.
3. If you do not already have a ReadyNAS account, create one.  
Click **New User** or **Get a new account**.

➤ **To set up ReadyNAS Remote on your ReadyNAS system:**

1. Make sure you enabled the correct protocols on your ReadyNAS system, as follows:
  - If you want to remotely access your share from a Mac or Windows computer, enable CIFS as described in [Manage File-Sharing Protocols](#) on page 43.
  - If you want to remotely access your share from an Android phone, iPhone, iPad, or iPod Touch, enable FTP as described in [Manage File-Sharing Protocols](#) on page 43.
2. In the FrontView main menu, select **Services > Installed Addons**.
3. Select the **ReadyNAS Remote** check box and click **Save**.
4. Click the **Manage ReadyNAS Remote** button.
5. In the ReadyNAS Remote application, and click the **Find** button.
6. In the Found list, select the user name for the account your created and click the **Add** button, enter the email address for the account you created.  
The user name is added to the Allowed list.
7. Click the **Apply Settings** button.

➤ **To access a share remotely from a Mac OS X device:**

1. Launch ReadyNAS Remote.
2. From the ReadyNAS Remote menu on the right side of the menu bar, select **Login** and enter your account name and password.
3. From the ReadyNAS Remote menu on the right side of the menu bar, select **Connect to ReadyNAS**.  
Finder displays a list of the remote ReadyNAS systems you can access.
4. Double-click the ReadyNAS system you want to access.
5. Do one of the following:
  - To log in as a user, click **Registered User**, enter your user name and password, and click **Connect**.  
This might be different from your ReadyNAS Remote user name and password.
  - To log in as a guest, click **Guest** and click **Connect**.
6. Select the share to access and click **OK**.

- **To access a share remotely from a Windows device:**
  1. Launch ReadyNAS Remote.
  2. Right-click the ReadyNAS Remote icon in the task bar, select **Login**, and enter your account name and password.
  3. Right-click the ReadyNAS Remote icon in the task bar, and select **Connect to ReadyNAS**.  
Windows Explorer displays a list of the remote ReadyNAS systems you can access.
  4. Double-click the ReadyNAS system you want to access.  
Windows Explorer displays a list of the shares on that ReadyNAS system.
  5. Double-click a share to access it.
- **To access a share remotely from an Android phone, iPhone, iPad, or iPod Touch:**
  1. Download the ReadyNAS Remote app from the Android Market or Apple's App Store.
  2. Launch the ReadyNAS Remote app and follow the instructions to connect to your share.

# 5 Stream Multimedia Files

---

# 5

You can store multimedia files, such as music and videos on your ReadyNAS system and stream them to computers, televisions, and other devices. You can also store images and photos that you can share with others.

This chapter includes the following topics:

- *Stream Multimedia Files for iTunes with Firefly*
- *Stream Multimedia Files for TiVo and Xbox with ReadyDLNA*
- *Share Photos With ReadyNAS Photos*
- *Set Up Discovery Services*

## Stream Multimedia Files for iTunes with Firefly

With Firefly, you can stream music and video from your ReadyNAS system to any computer, TV set-top box, or device in your house that has iTunes and other music streaming players including as Sonos and Roku SoundBridge. You can also set up smart playlists that sort your music according to genre, artist, year, and other categories.

### Set Up iTunes Streaming

You can quickly start streaming media to any device with iTunes.

➤ **To start iTunes streaming:**

1. From the FrontView main menu, select **Services > Streaming Services**.
2. Select **iTunes Streaming Server**.
3. Click the **Apply** button.
4. Open the share named media on your computer and copy your music files to the Music folder on that share.

If you want your music to reside on a different location on your ReadyNAS system, see [Select Which Music Files to Stream](#) on page 72.

5. From the FrontView main menu, select **Services > Streaming Services** and click the **Connect to the Firefly setup** link.
6. In Firefly, click **Start Full Scan**.

➤ **To listen to music in iTunes:**

1. Launch iTunes.
2. In the iTunes sidebar under Shared, click the name of your iTunes server.

By default, it is called "Itunes server." If you want to change the name, see [Change the Server Name and Password](#) on page 72.

3. Click **Play**.

## Use Smart Playlists

You can create smart playlists that sort your music according to genre, artist, year, and more. Then you can listen to those playlists on any device that supports iTunes.

➤ **To create a smart playlist:**

1. From the FrontView main menu, select **Services > Streaming Services** and click the **Connect to the Firefly setup** link.
2. Click **Smart playlists**.
3. Click **Add new playlist**.
4. Enter a name in the **Name** field.
5. Click **Wizard** and select your criteria.
6. Click **Create**.

➤ **To edit a smart playlist:**

1. From the FrontView main menu, select **Services > Streaming Services**, and then click the **Connect to the Firefly setup** link.
2. Click **Smart playlists**.
3. Click **Edit** beside the playlist's name, and do any of the following:
  - Change the name in the Name field.
  - Click **Wizard** and change your criteria.
4. Click **Update**.

➤ **To use a smart playlist in iTunes:**

1. Launch iTunes.
2. In the iTunes sidebar under Shared, click the triangle beside your iTunes server name and click the triangle beside Playlists.
3. Click **Play**.

## Select Which Music Files to Stream

You can change where your multimedia files are stored on your ReadyNAS system or store multimedia files in multiple locations.

### ➤ To select which music files to stream:

1. From the FrontView main menu, select **Services > Streaming Services** and click the **Connect to the Firefly setup** link.
2. In the Firefly main menu, click **Configuration**.
3. Do any of the following:
  - To change the location for a music folder, edit the **Music folder** field.
  - To add a new folder of music, click **Add music folder** and enter the path name for the folder.  
  
Firefly lists music from the listed folders in iTunes.
  - To change which types of files are listed in iTunes, edit the list of file extensions in **Extensions**.
4. Click **Save**.
5. From the Firefly main menu, click **Server status**.
6. Click **Start Full Scan**.

## Change the Server Name and Password

You can change the name used to identify your ReadyNAS system in the iTunes sidebar or assign a password that users need to enter before they can use your files.

### ➤ To change server name and password:

1. From the FrontView main menu, select **Services > Streaming Services** and click the **Connect to the Firefly** setup link.
2. Click **Configuration**.
3. Do any of the following:
  - To change the name that appears in the iTunes sidebar, edit the **Sever Name** field.
  - To require that users enter a password when playing music on the ReadyNAS system, enter a password in the **Music Password** field.
  - To require that users enter a password when changing Firefly preferences, enter a password in the **Admin password** field.
4. Click **Save**.



## Change How to Scan Media Files

Scanning your multimedia files updates your ReadyNAS system's list of available songs so that recently added songs appear in iTunes. Scanning also tags untagged songs with important information such as a song's duration. You can scan your songs immediately or you can choose how often to scan your files automatically.

Some media files are not tagged with data that gives iTunes such important information such as the duration of a song. When scanning your multimedia files, you can compute this information for untagged files. You can determine how aggressively and accurately to compute it. If a file is tagged with this information, this information is not computed for it.

### ➤ To change how to scan media files:

1. From the FrontView main menu, select **Services > Streaming Services** and click the **Connect to the Firefly setup** link.
2. Click **Configuration**.
3. Do any of the following:
  - To choose how accurately to calculate data about media files that were not tagged with information such as duration, from the Scan Type drop-down list, select one of the following options:
    - **0 - Normal**. Quickest and least accurate.
    - **1 - Aggressive**. Slower and more accurate.
    - **2 - Painfully Aggressive**. Slowest and fully accurate.

Many media files are tagged with this data, and this calculation is not needed for them.

- To choose how often to scan for new media files, in the Rescan Interval field, enter a time in seconds. The default is 86,400 seconds, or every 24 hours.
  - To scan for new media files even if no iTunes clients are accessing the media files, from the Always Scan drop-down list, select **Yes**.
4. Click **Save**.

### ➤ To scan for new media files immediately:

1. From the FrontView main menu, select **Services > Streaming Services** and click the **Connect to the Firefly setup** link.
2. Click **Start Full Scan**.

## Stream Multimedia Files for TiVo and Xbox with ReadyDLNA

You can stream multimedia files to any device on your local network that uses the Digital Living Network Alliance (DLNA) standard, including TiVo and Xbox.

### ➤ To start ReadyDLNA streaming:

1. On your computer, open the ReadyNAS system share named media and copy your music files to it.

If you want your music to reside on a different location on your ReadyNAS system, see [Select Which Music Files to Stream](#) on page 72.

2. From the FrontView main menu, select **Services > Streaming Services**.
3. Select the **ReadyDLNA** check box.
4. To play your content on TiVo devices, select the **Enable TiVo support** check box.
5. Click the **Apply** button.

Your media files are scanned automatically.

### ➤ To select which music files to stream:

1. From the FrontView main menu, select **Services > Streaming Services**.
2. Do any of the following:
  - To change the location for a music folder, from the Share drop-down list, choose a new share and edit the Folder field.
  - To add a new folder of music, click the **Add new folder** button and choose the correct share and folder.

The media from the listed folders appears in TiVo.

  - To change which types of files are listed in iTunes, from the Content Types drop-down list, choose an option.
3. Click the **Apply** button.

Your settings are saved.

### ➤ To scan media files:

1. From the FrontView main menu, select **Services > Streaming Services**.
2. Do any of the following:
  - To scan for new media files automatically, select the **Automatically update database** check box and click the **Apply** button.
  - To scan for new media files immediately, click the **Rescan media files** button.

## Share Photos With ReadyNAS Photos

ReadyNAS Photos lets you store photos on your ReadyNAS system, create photo albums with them, and then share them with anyone with an email address.

### Get Started with ReadyNAS Photos

You can enable ReadyNAS Photos on your ReadyNAS system, create an account, and then log in.

➤ **To enable ReadyNAS Photos:**

1. From the FrontView main menu, select **Services > Installed Add-ons**.
2. Select the **ReadyNAS Photos** check box.
3. Click the **Apply** button.
4. Click the **Install ReadyNAS Photos** button.
5. Download and install the software for your computer.

➤ **To log in to ReadyNAS Photos:**

1. Launch ReadyNAS Photos.
2. If you do not have an account, click **Sign Up**, and fill out the form, including a user name and password.
3. Enter your user name and password and click the right arrow.
4. If you see a list of ReadyNAS systems, click the system where you want to store the photos.  
If you need to provide a user name and password to access the media share on that system, enter it in the dialog box that displays and click **Connect**.

### Create Photo Albums

You can use ReadyNAS Photos to import photos and create albums from them.

➤ **To create a new photo album from individual photos:**

1. In ReadyNAS Photos, click **New Album**.  
If you do not see New Album, click **Photos Home** and click **New Album**.
2. In the Album Name field, enter a name for the new photo album.
3. Click the folder icon and select the photos to import.
4. Click the right arrow button.

The photos are imported and the new album displays in your album list.

- **To create a new photo album from a folder of photos:**
  1. Make sure the photos for the album are in one folder, and that the name of the folder is the name you want for the album.
  2. In ReadyNAS Photos, click **Import Albums**.  
If you do not see **Import Albums**, click **Photos Home** and click **Import Albums**.
  3. Select the folder to import and click the button with the right arrows.  
The folder displays in the Selected Folders list.
  4. Click **Start**.  
The photos are imported and the new album displays in your album list.

## View and Share Photos

You can view photos on a computer and share them with anyone with an email address.

- **To view photos:**
  1. In ReadyNAS Photos, click the photo album.  
If you do not see any photo albums, click **Photos Home** and click the photo album.
  2. Do any of the following:
    - To view a slideshow of the images, click the slideshow button.
    - To view small versions of all the photo, click the Thumbnail or List button.
    - To see a larger version of a photo, click it.
    - To rotate a photo right or left, click the Rotate buttons.
    - To delete a photo, click the Trash button.
- **To share a photo album:**
  1. In ReadyNAS Photos, click the photo album.  
If you do not see any photo albums, click **Photos Home** and click the photo album.
  2. Click **Share**.
  3. Enter a comma-separated list of email addresses, and, optionally, enter a message about the album.
  4. Click **Share**.

## Set Up Discovery Services

Discovery services let a computer know about services that other computers and servers are making available for use. Your ReadyNAS system can use discovery services to let computers know about such services as multimedia files and printers. The discovery services are turned on by default, but you can turn them off if you need extra security.

Your ReadyNAS system supports two discovery services:

- Bonjour is included in Mac OS X. In other operating systems, it is used by some applications such as iTunes.
- UPnP (Universal Plug and Play) is used by many devices to find multimedia files.

➤ **To enable or disable discovery services:**

1. From the FrontView main menu, select **Services > Discovery Services**.

2. Manage the discovery services, as follows:

- To enable Bonjour, select the **Bonjour Service** check box.

If you enable Bonjour, the Advertise check boxes become active. Select or clear these check boxes to determine what features Bonjour advertises.

- To disable Bonjour, clear the **Bonjour Service** check box.
- To enable UPnP, select the **uPnP** check box.
- To disable UPnP, clear the **uPnP** check box.

3. Click the **Apply** button.

Your settings are saved.

# 6 Back Up Files

---

# 6

This chapter describes several ways you can back up files with your ReadyNAS system. You can back up Mac computers to your ReadyNAS system with Time Machine, you can back up your ReadyNAS system to a remote location with ReadyNAS Vault, or you can create other backup jobs on your ReadyNAS system with FrontView.

This chapter includes the following topics:

- *Back Up a Mac to a ReadyNAS System with Time Machine*
- *Back Up a ReadyNAS System Remotely with ReadyNAS Vault*
- *Back Up to or from a ReadyNAS System*

## Back Up a Mac to a ReadyNAS System with Time Machine

If you have a Mac, you can use Time Machine to back it up to your ReadyNAS system. In FrontView, enable Time Machine support on your ReadyNAS system. Then, on your Mac, select your ReadyNAS system as your backup disk.

➤ **To enable Time Machine support:**

1. From the FrontView main menu, select **Backup > Time Machine**.
2. Select **Enable Time Machine support**.
3. In the Password field, create a password.

The user name is ReadyNAS and cannot be changed.

4. In the Capacity field, enter a maximum size in GB for the Time Machine share.

If you leave this field blank or enter zero, your Time Machine backup can use all available space on your ReadyNAS system. If you enter a size, the backup can use whatever is smaller: all available space or the size entered.

5. Click the **Apply** button.

The AFP protocol is enabled, if it was not enabled already.

➤ **To back up your Mac to your ReadyNAS system:**

1. Open System Preferences and click **Time Machine**.
2. Click **Select Disk**.
3. Select **ReadyNAS** and click **Use Backup Disk** or **Use for Backup**.

A dialog box displays.

4. Enter **ReadyNAS** as the user name, enter the password you created in the previous procedure, and click **Connect**.

Your Mac starts to back up your files to the ReadyNAS system. The first backup can take several hours.

## Back Up a ReadyNAS System Remotely with ReadyNAS Vault

ReadyNAS Vault keeps your data safe even if your ReadyNAS system is damaged or destroyed in a fire, flood, theft, or other disaster. The data is backed up remotely over a secure connection. You can use any web browser, even a browser on a smart phone, to set up the backup schedule and view your backed-up files. You can also let other people access your files, if you want. For more information, see <http://www.netgear.com/readynasvault>.

### ➤ To set up ReadyNAS Vault:

1. From the FrontView main menu, select **Backup > ReadyNAS Vault**.
2. Select **Enable ReadyNAS Vault support** and click the **Apply** button.
3. Click the **click here to register** link to create a free temporary account.
4. Enter your email address and password and click **Register**.
5. Click **Manage ReadyNAS Vault**.

A website opens that lets you set your ReadyNAS Vault options.

## Back Up to or from a ReadyNAS System

You can back up files from your ReadyNAS system to another computer, or from another computer to the ReadyNAS system. The backup can happen automatically at any time you set or when you press the Backup button on the front of your ReadyNAS system.

Either the backup source or destination must be on the ReadyNAS system. You cannot use the ReadyNAS system to back up from one remote location to another.

The backup jobs described in this manual are best for backing up data files and documents. If you want to back up every file on a PC, including the operating system, so that you can restore the files and boot from the restored copy, use third-party backup software that can back up a computer to a ReadyNAS system.



## Create a Backup Job

You can use FrontView to create a backup job for your ReadyNAS system.

➤ **To create a backup job:**

1. If you need to back up a large share while users are accessing it, consider creating a snapshot of the share and backing up the snapshot.  
For more information, see [Use Snapshots](#) on page 87.
2. From the FrontView main menu, select **Backup > Add a New Backup Job**.
3. In the Select backup source pane, determine what to back up, as follows:
  - To back up data on the ReadyNAS system, see [Select a Location on Your ReadyNAS System](#) on page 82.
  - To back up data that is not on the ReadyNAS system, see [Select a Remote Location](#) on page 82.
4. In the Select backup destination pane, determine the destination for the backup, as follows:
  - If the data you are backing up is local, choose a remote location for the destination. For more information, see [Select a Remote Location](#) on page 82.
  - If the data you are backup up is remote, choose a location on the ReadyNAS system for the destination. For more information, see [Select a Location on Your ReadyNAS System](#) on page 82.
5. In the Choose backup schedule pane, determine when to perform the backup job.  
For more information, see [Determine When to Perform the Backup](#) on page 84.
6. In the Choose backup options pane, set backup job options.  
For more information, see [Set Backup Options](#) on page 85.
7. Click the **Apply** button.  
Your settings are saved.

## Select a Location on Your ReadyNAS System

Select a backup source or destination on your ReadyNAS system. You have the following options:

- **Share.** Each share is listed in the source and destination drop-down lists by name.
- **Volume.** Each volume is listed in the source and destination drop-down lists by name. If you are using X-RAID, your ReadyNAS system has only one volume, C. When you choose a volume as a backup source, all shares, private home shares, and hidden shares in the volume are backed up, each to a separate folder on the destination.

You cannot choose a volume as a backup destination. Instead, choose a share on the volume.

- **USB device.** Each USB port on your ReadyNAS system is listed in the source and destination drop-down lists. Choose a port to back up to or from the device attached to that port. You can set up a backup even though no device is attached to the port. If no device is attached when the backup is triggered, the backup fails.

If you want to disconnect the device when the backup completes, select **Unmount USB drive after backup.**

- **Private home share.** Each user's private share is listed in the source and destination menus by name.
- **All home shares.** Available in only the source drop-down list, this option backs up all the private home shares, each to its own folder on the destination.
- **Folder.** To back up to or from only one folder, click **Browse** and select the folder.

## Select a Remote Location

Select a location that is not on the ReadyNAS system as the source or destination for the backup. You have the following options:

- **Windows or NAS server using archive bits.** Select the **Remote: Windows/NAS (Archive Bit)** menu option to back up a Windows or NAS server. It is available only in the Source drop-down list. When performing an incremental backup, the ReadyNAS system uses a file's archive bit to determine whether to back up the file.
  - In the Host field, enter the path name for the server in one of the following forms:
    - `//<server_name>/<path_name>`
    - `//<IP_address>/<path_name>`
    - `//<server_name>/<share_name>/<path_name>`
  - In the User name and Password fields, enter the user name and password for the server.
  - If you want to back up to a specific folder on the server, click **Browse** and select the folder.

- **Windows or NAS server using timestamps.** Select the **Remote: Windows/NAS (Timestamp)** menu option to back up to or from a Windows or NAS server. It is available in both the source and destination drop-down lists. When this location is the source and an incremental backup is being performed, the ReadyNAS system uses timestamps to determine which files to back up.
  - In the Host field, Enter the path name for the server in one of the following forms:
    - `//<server_name>/<path_name>`
    - `//<IP_address>/<path_name>`
    - `//<server_name>/<share_name>/<path_name>`
  - In the User name and Password fields, enter the user name and password for the server.
  - If you want to back up to a specific folder on the server, click **Browse** and select the folder.
- **HTTP server.** Select the **Remote: Website** menu option to back up to or from an HTTP server. It is available in both the source and destination drop-down lists.
  - In the Host field, enter the path name for the server in one of the following forms:
    - `http://www.<URL>/<path_name>`
    - `http://<IP_address>/<path_name>`
  - In the User name and Password fields, enter the user name and password for the server.
  - If you want to back up to a specific folder on the server, click **Browse** and select the folder.
- **FTP server.** Select the **Remote: FTP site** menu option to back up to or from an FTP server. It is available in both the source and destination drop-down lists.
  - In the Host field, enter the path name for the server in the one of the following forms
    - `ftp://<server_name>/<path_name>`
    - `ftp://<IP_address>/<path_name>`
  - In the User name and Password fields, enter the user name and password for the server.
  - If you want to back up to a specific folder on the server, click **Browse** and select the folder.
- **NFS server.** Select the **Remote: NFS site** menu option to back up to or from an NFS server. It is available in both the source and destination drop-down lists.
  - In the Host field, enter the path name for the server in one of the following forms:
    - `<server_name>:/<path_name>`
    - `<IP_address>:/<path_name>`
  - If you want to back up to a specific folder on the server, click **Browse** and select the folder.

You do not need to enter a user name or password.

- **Rsync server.** Select the **Remote: Rsync server** menu option to back up to or from an Rsync server. It is available in both the source and destination drop-down lists.

Make sure you enable the Rsync file-sharing protocol if you choose this option, as described in [Manage File-Sharing Protocols](#) on page 43.

- In the Host field, enter the path name for the server in one of the following forms:
  - <server\_name>::<module\_name>/<path name>
  - <IP\_address>::<module\_name>/<path\_name>
- In the User name and Password fields, enter the user name and password for the server.
- If you want to back up to a specific folder on the server, click **Browse** and select the folder.
- If you want to compress the backup to save space, select **Enable Compression**. You cannot browse the files in the backup if it is compressed.
- If you want to delete files in the backup when they are deleted in the source, select **Remove deleted files on target**. This option saves space but you cannot recover a file that a user accidentally deleted.
- If you want to ensure that the backed up files are compatible with older versions of Windows, select **Enable FAT32 compatibility mode**.
- If you do not want to back up specific files or folders, in the **Add files and directories to be excluded** field, enter the path names of the files or folders that you want to exclude as a comma-separated list.
- **USB device.** This option lets you back up to or from a device connected to a USB port on the ReadyNAS system. Any USB device attached to your ReadyNAS system is available in both the source and destination drop-down lists.
  - If you want to back up to or from a specific folder on device, click **Browse** and select the folder.
  - If you want to disconnect the device when the backup finishes, select **Unmount USB drive after backup**.

### *Determine When to Perform the Backup*

You have the following options:

- To perform the backup only when you initiate it, clear the **Perform backup every** check box.
- To perform the backup at a regular interval, select the **Perform backup every** check box and set a schedule.

Backups are performed at 5 minutes past the hour to give you time to create a snapshot of the data before the data is backed up. For more information about snapshots, see [Use Snapshots](#) on page 87.

## Set Backup Options

You can set any of the following options in the **Choose backup options** pane:

- To choose how often to perform a full backup, select an option from the **Schedule full backup** drop-down list. Incremental backups are performed for all other backups. You can perform a full backup every time, just the first time, or every few weeks.

A full backup backs up all the files from the destination. An incremental backup backs up only the files that have changed since your last backup. Performing an incremental backup is quicker, but performing lots of incremental backups can take a lot of disk space.

- To delete all items in the backup destination before performing a full backup, select the **Remove the contents of the backup destination before a full backup is performed** check box. All items in the backup destination are erased, even if they are not part of the backup. You cannot recover items that were deleted before the last full backup.

---

**Note:** Before you select this option, ensure that you correctly set your backup source and destination. If you reverse them, you might permanently delete your source files. NETGEAR recommends that you enable this option only if the destination device is very low on storage space.

---

- To choose what information is sent to the administrators' email addresses after a backup is completed, select an option from the On backup completion, send drop-down list. You can choose to send a message only when errors occur, to always send a complete listing of what was backed up, or to always send a message with status and error messages.
- To change the owner of the backed-up files in the backup destination to be the owner of the backup share, select the **After backup is complete, change ownership of files in the backup destination** check box. Use this option only if you use the share security mode and you want to make sure all users can access the backed-up files in the backup destination.

## Assign Backup Jobs to the Backup Button

You can assign a backup job to the Backup button on the front of your ReadyNAS system. This makes performing a backup as simple as pressing the Backup button.

### ➤ To assign a back up job to the Backup button:

1. From the FrontView main menu, select **Backup > Backup Jobs**.
2. In the Backup Button Setup pane, use the drop-down lists to determine which backup jobs to perform when the backup button is pressed.

When you press the Backup button, the jobs are performed in the order listed.

## Edit a Backup Job

After you create a backup job, you can edit it later.

### ➤ To edit a backup job:

1. From the FrontView main menu, select **Backup > Backup Jobs**.
2. In the Backup Schedule pane, click the job number button for the backup job.
3. Edit the job the same way that you would create one.

For more information, see [Create a Backup Job](#) on page 81.

## Recover Backed-up Data

You can create a recovery backup job in much the same way you originally backed up the data: Create a new backup job that is the “recovery” job, and use the backup job’s source as the recovery job’s destination and the backup job’s destination as the recovery job’s source. You also need to set a few options correctly to avoid accidentally erasing the recovered data.

### ➤ To recover backed-up data:

1. From the FrontView main menu, select **Backup > Add a New Backup Job**.
2. In the Select backup source pane, choose the original backup job’s destination.

Ensure that the settings in the recovery job’s source pane are exactly the same as the settings in the backup job’s destination pane.

For more information, see [Select a Location on Your ReadyNAS System](#) on page 82 and [Select a Remote Location](#) on page 82.

3. In the Select backup destination pane, select the original backup job’s source.

Ensure that the settings in the recovery job’s destination pane are exactly the same as the settings in the backup job’s source pane.

4. In the Choose backup schedule pane, clear the **Perform back every** check box.

Do not set up a schedule for the recovery job, or else you might accidentally erase the recovered data. Instead, you perform the recovery job once manually.

5. In the Choose backup options pane, set these options:
  - From the Schedule full backup drop-down list, select **Every time**.
  - Clear the **Remove the contents of the backup destination before a full backup is performed** check box.

You can set the other options in this pane as you want. For more information, see [Set Backup Options](#) on page 85.

6. Click the **Apply** button.  
The recovery job is saved.
7. From the FrontView main menu, select **Backup > Backup Jobs**.
8. Click the **Go** button beside the recovery job you created.  
Your data is recovered.

## Use Snapshots

If you back up a large share while users are still editing files on it, you might end up with a backup that is inconsistent and unusable. For example, if a user moves a file that has not been backed up into a folder that has already been backed up, that file will not appear in the backup and will be lost. You can schedule the backup to occur when no one is accessing the share, but if that is not possible, you can use a snapshot.

A snapshot is a read-only copy of the volume's files as they were at a specific time. When users change files after that time, information about those changes is stored in a special area on your system's volume. When users access the share, the ReadyNAS system merges information from the snapshot with information about changes on the fly and serves up-to-date data.

A ReadyNAS system serves data more slowly when it is keeping a snapshot, so you might want to create snapshot of a volume only when you are backing it up.

When creating the backup job for a snapshot, you need to select the name of the snapshot as the source. To do that, you need to create a snapshot before you create the back up job, as described in [Create a Snapshot Now](#) on page 88. The name of a share's snapshot is the share's name plus "-snap." For example, the snapshot for "media" is "media-snap."

If the amount of space needed for the changes surpasses the size of the reserved space, the volume snapshot expires. So, when you create a snapshot schedule, be sure the snapshot is available long enough for the backup job to finish.

### Set Up a Snapshot Schedule

You can use FrontView to set up a snapshot schedule.

➤ **To set up a snapshot schedule:**

1. From the FrontView main menu, select **Volumes > Volume Settings**.
2. Click the Snapshot tab.

If FrontView does not display a Snapshot tab, your volume is not set up for snapshots.

3. In the Snapshot schedule pane, set the schedule for taking snapshots.

Ensure that the snapshot schedule overlaps the backup schedule.

To give you enough time to create a snapshot before its backup begins, snapshots start on the hour and backups start at 5 minutes past the hour.

4. From the last listed drop-down list, select how long you want the snapshot to last.

Because using a snapshot can slow your ReadyNAS system, you might want it to last just long enough for the backup to finish. Make sure the snapshot is available for the full duration of the backup.

5. Click **Save**.

### *Determine How Much Space to Reserve For Snapshots*

Make sure the space is large enough to handle any changes that happen while the snapshot is active. When the reserved space is used up, the snapshot expires.

Creating, modifying, and deleting files all take up space. For example, when a 1 MB file is deleted, 1 MB of the reserved space is used.

➤ **To determine how much space to reserve for snapshots:**

1. From the FrontView main menu, select **Volumes > Volume Settings**.
2. Click the Snapshot tab.

If FrontView does not display a Snapshot tab, your volume is not set up for snapshots.

3. In the Snapshot space pane, determine how much space to reserve for snapshots.
4. Click **Save**.

### *Create a Snapshot Now*

You can create a snapshot outside of the usual snapshot schedule, if you want to start a long backup or if you want to set up a backup that uses snapshots.

➤ **To take a snapshot now:**

1. From the FrontView main menu, select **Volumes > Volume Settings**.
2. Click the Snapshot tab.

If FrontView does not display a Snapshot tab, your volume is not set up for snapshots.

3. Click **Take a snapshot now**.



# 7 Other Services

---

# 7

This chapter explains how you can use your ReadyNAS system to host a local website or to share a USB printer with others.

This chapter covers the following topics:

- *Create and Access a Local Website*
- *Set Up a Printer*

## Create and Access a Local Website

You can host a local website on your ReadyNAS system that anyone on your local network can view.

### ➤ To host a local website:

1. Create a share for your website and copy your website's files to it.
  2. From the FrontView main menu, select **Shares > Share Listing**.
  3. To the right of the share that contains the website, click the icon for HTTP.
  4. From the Default Access drop-down list, select **Read-only**.
  5. Clear the **Hosts allowed access** check box.
  6. Click the **Apply** button.
  7. From the FrontView main menu, select **Services > Standard File Protocols**.
  8. In the HTTP pane, from the Redirect default web access to this share drop-down list, select the name of the share.
  9. Click the **Apply** button.
- Your settings are saved.

### ➤ To access the local website:

1. Launch a web browser.
2. Enter the IP address for your ReadyNAS system.

## Set Up a Printer

After you connect a USB printer to a USB port on your ReadyNAS system, any computer that supports IPP, CIFS/SMB, or Bonjour printing can use it. And with FrontView, you can view the printer's queued-up jobs and delete any that are blocking the system.

### ➤ To set up a printer on a Windows computer over Bonjour:

1. On your Windows computer, download and install Bonjour Print Services for Windows, available at <http://www.apple.com/support/bonjour>.
2. Use the Bonjour Printer Wizard to set up the printer.

### ➤ To set up a printer on a Windows computer over CIFS/SMB:

1. On your Windows computer, launch RAIDar.
2. Select the ReadyNAS system that is connected to the printer and click **Browse**.
3. Double-click the printer's icon.

➤ **To view and manage print jobs:**

1. From the FrontView main menu, select **Printers > Print Queue Service**.
2. To delete some jobs, select the check box beside the jobs that you want to delete and click **Delete Print Job**.

# 8 Manage the ReadyNAS System

---

# 8

This chapter describes how to set various options for your ReadyNAS system. This chapter includes the following topics:

- *Set the Time and Time Zone*
- *Set the Language*
- *Send Alerts*
- *Turn the ReadyNAS System On and Off*
- *Back Up and Restore Settings*
- *Manage Add-Ons*
- *Improve Performance*
- *Set Network Settings*
- *View Log Files*

## Set the Time and Time Zone

You can set the time zone for your ReadyNAS system. You can also set the correct time manually or let your system set the time automatically.

➤ **To set the time zone:**

1. From the FrontView main menu, select **System > Clock**.
2. From the Timezone drop-down list, select your time zone.
3. Click the **Apply** button.

Your settings are saved.

➤ **To set the time manually:**

1. From the FrontView main menu, select **System > Clock**.
2. In the Select Current Time pane, use the drop-down lists to select the correct time.

If the drop-down lists are dimmed, the time is being set automatically. Clear the **Synchronize clock with the following NTP server(s)** check box to set the time manually.

3. Click the **Apply** button.

Your settings are saved.

➤ **To set the time automatically:**

1. From the FrontView main menu, select **System > Clock**.
2. In the NTP Options pane, select the **Synchronize clock with the following NTP server(s)** check box.

You can use the NTP servers that are already entered or you can delete them and enter your own.

3. Click the **Apply** button.

Your settings are saved.

## Set the Language

You can set the language that the ReadyNAS system uses for file listings and automatically generated email messages. Choose the language used by most of the users who access your ReadyNAS system.

This setting does not control the language of the labels in FrontView or RAIDar. To change the language for them, use System Preferences in Mac OS X or the Control Panel in Windows.

### ➤ To set the language:

1. From the FrontView main menu, select **System > Language**.
2. From the Language Setting drop-down list, select a language
3. If you select a Unicode language from the Language Setting drop-down list, select the **Allow Unicode for user, group and share names** check box to use Unicode characters in the names of users, groups, and shares.

To disable this option later, you must perform a factory reset, which erases all the data on your ReadyNAS system.

4. If you enabled the FTP protocol and your FTP client uses a different character encoding than your ReadyNAS system, select the **Enable character encoding conversion for FTP clients** check box to convert the characters.
5. Click the **Apply** button.

Your settings are saved.

## Send Alerts

Your ReadyNAS system can send emails to let users and administrators know about important events. It can let users know that an account has been created for them and that they are reaching their quotas. It can also let administrators know when the system needs attention.

This section describes how to determine the email account from which administrative and user alert messages are sent. You can also determine who receives administrative alert messages and when administrative alert messages are sent. To determine who receives user messages, see [Manage Users and Groups](#) on page 29.

## Change The Account Used to Send Email Alerts

You can change the account used to send email messages to administrators and users. Administrators receive email messages about problems with the ReadyNAS system. Users receive email messages when they are near or exceed their disk quotas.

This account does not need to be one of the accounts to which email messages are sent.

### ➤ To change the account used to send email alerts:

1. From the FrontView main menu, select **System > Alerts**.
2. Click the Contacts tab.
3. From the Email Provider drop-down list, select an email provider.  
If your provider is not listed, select **Custom**.
4. In the User and Password fields, enter the user name and password for your account
5. If you select **Custom** from Email Provider drop-down list, in the SMTP server, SMTP port, From, and Use TLS fields, enter your email provider's information.  
If you are not sure what to enter in these fields, contact your email provider.
6. (Optional) If you want to make sure the email addresses you entered are correct, click **Send Test Message**.  
A message is sent to each address you listed.
7. Click the **Apply** button.  
Your settings are saved.

## Change Who Receives Alerts

You can use FrontView to change who you want to receive email alerts when something happens to your system.

### ➤ To change who receives alerts:

1. From the FrontView main menu, select **System > Alerts**.
2. Click the Contacts tab.
3. In the Alert Contact 1, Alert Contact 2, and Alert Contact 3 fields, enter the email addresses that you want to receive alerts.
4. (Optional) If you want to make sure the email addresses you entered are correct, click **Send Test Message**.  
A message is sent to each address you listed.
5. Click the **Apply** button.  
Your settings are saved.

## Determine When to Send Alerts

You can determine what events trigger an email message being sent to administrators, including the disk becoming full or the system's becoming dangerously hot. All events are selected by default. If you receive email messages about events that you are aware of, you can clear the check boxes for the events that triggered them. NETGEAR recommends leaving all the event check boxes selected.

➤ **To determine when to send alerts:**

1. From the FrontView main menu, select **System > Alerts**.
2. Click the Enter the email addresses that you want to receive alerts tab.
3. In the Alert Events pane, select the check boxes for the conditions that you want to trigger an email alert message.

You cannot turn off alerts for some conditions. These events are dimmed.

4. Click the **Apply** button.

Your settings are saved.

## Turn the ReadyNAS System On and Off

You can turn off the ReadyNAS system with FrontView if you cannot access its buttons. You can also choose to shut it down automatically at set times.

### Turn the ReadyNAS System Off Now

You can turn the system off with the buttons on its front. If your system is not nearby, you can also shut it down with FrontView.

➤ **To turn the ReadyNAS system off now:**

1. From the FrontView main menu, select **System > Shutdown**.
2. Select the **Shutdown and turn off device** radio button.
3. Click the **Apply** button.

Your ReadyNAS system shuts down.



## Restart the ReadyNAS System

If you suspect the files on your ReadyNAS system are corrupted or the quotas are incorrect, you can check them by restarting your ReadyNAS system from FrontView.

### ➤ To restart the ReadyNAS system:

1. From the FrontView main menu, select **System > Shutdown**.
2. Select the **Shutdown and reboot device** radio button.
3. (Optional) If you suspect the files on your ReadyNAS system are corrupted, select the **Perform volume scan on next boot** check box.

The next time you start your ReadyNAS system, the scan is performed. This scan can take up to an hour to complete, depending on the size of your disk.

4. (Optional) If you suspect the quotas on your ReadyNAS system are incorrect, select the **Check and fix quotas on next boot** check box.

The next time you start your ReadyNAS system, the scan is performed. This scan can take up to an hour to complete, depending on the size of your disk.

5. Click the **Apply** button.

Your ReadyNAS system shuts down and restarts. If you selected any scans, they are performed when your system reboots, and your system is available for use when the scans finish.

## Turn the ReadyNAS System On and Off Using a Schedule

You can set up a schedule for turning your ReadyNAS system on and off automatically. Each day of the week can have a different schedule.

### ➤ To turn the ReadyNAS system on and off on a schedule:

1. From the FrontView main menu, select **System > Power**.
2. In the Power Timer pane, select the **Enable power timer** check box.
3. Use the drop-down lists in this pane to establish a schedule for turning your ReadyNAS system on and off.

Some ReadyNAS systems cannot be turned on automatically. If your system does not support this feature, Power ON is not available in the Action drop-down list.

If you select the blank entry in the Action drop-down list, the ReadyNAS system is left as is and is not turned on or off.

4. Click the **Apply** button.

Your settings are saved.

## Turn Off the ReadyNAS System Automatically to Prevent Damage

You can have your ReadyNAS system turn itself off automatically when a dangerous condition happens, for example, if the system's temperature is too high or if a disk fails.

➤ **To turn the ReadyNAS system off automatically to prevent damage:**

1. From the FrontView main menu, select **System > Alerts**.
2. Click the **Alerts** tab.
3. In the Other Alert Settings pane, select any of the following:
  - To turn the ReadyNAS system off when a disk fails or no longer responds, select the **Power-off ReadyNAS when a disk fails or no longer responds** check box.
  - To turn the ReadyNAS system off when its temperature is dangerously high, select the **Power-off ReadyNAS when disk temperature exceeds safe levels** check box.
4. Click the **Apply** button.

Your settings are saved.

## Back Up and Restore Settings

You can back up the settings and preferences you have set on your ReadyNAS system, in case you set up another ReadyNAS system to be just like it. Then you can restore those settings on another system.

If you want to back up the files stored on your ReadyNAS system, see [Chapter 6, Back Up Files](#).

➤ **To back up settings:**

1. From the FrontView main menu, select **System > Config Backup**.
2. Click the **Backup** tab.
3. Select what to back up:
  - To back up the shares users can access, the rights users have for each share, and the protocols the enabled for shares, select **Share Access**.
  - To back up the file-sharing protocols and streaming and discovery services that are enabled, select **Services**.
  - To back up the names and settings for users and groups, select **Users and Groups**.
  - To back up information about network settings and interfaces, such as IP addresses and host names, select **Network Settings**.

- To back up other settings, including definitions of backup jobs and email alert settings, select **Miscellaneous Settings**.
  - To back up 50 MB worth of files on the shares, select **Data Volumes**.
  - To back up all this information, select **Everything**.
4. Click **Download configuration archive** and determine where to store the archive.  
The settings are stored in a zip file at the selected location.

➤ **To restore saved settings:**

1. From the FrontView main menu, select **System > Config Backup**.
2. Click the Restore tab, click **Choose File**, and select the configuration archive.
3. Click **Restore**.

## Manage Add-Ons

Add-ons let you add new abilities to your ReadyNAS system, such as the ability to use a type third-party backup software with your ReadyNAS system or the ability to stream multimedia files to different types of devices. To see what add-ons are available, visit <http://www.readynas.com/addons> and [http://www.readynas.com/community\\_addons](http://www.readynas.com/community_addons).

### Manage Installed Add-Ons

➤ **To manage installed add-ons:**

1. From the FrontView main menu, select **Services > Installed Add-ons**.  
Each add-on displays in its own pane.
2. To remove an add-on, click the **Remove** button in its pane.
3. If you make changes to an add-on's options, click the **Save** button in its pane.

### Install an Add-On

After you download an add-on from <http://www.readynas.com/addons> and [http://www.readynas.com/community\\_addons](http://www.readynas.com/community_addons), you need to install it on your ReadyNAS system.

➤ **To install an add-on:**

1. From the FrontView main menu, select **System > Update**.
2. Click the Local tab.
3. Click **Choose File** and select the add-on file.

Most add-on files use the .bin extension.

4. Click **Upload and verify image**.

Your ReadyNAS system makes sure the file is valid.

5. Click **Perform System Update**.

Your ReadyNAS system installs the add-on.

6. To use the add-on, from the FrontView main menu, select **Services > Installed Add-ons**.

## Improve Performance

This section describes options let you improve your ReadyNAS system's performance, if you are willing to accept some limitations or risk losing data. Following are some other options that improve performance:

- If your client computers and your router support jumbo frames, see [Enable Jumbo Packet Support](#) on page 104.
- If your ReadyNAS system does not contain any files that are accessed by multiple users at once, such as a Quickbooks database, see [Cache Files Locally Using CIFS](#) on page 60.

➤ **To improve performance:**

1. From the FrontView main menu, select **System > Performance**.

2. Set any of the following options:

- If you do not mind losing some data in the case of power failure, select **Enable disk write cache**. This option allows the disk to acknowledge disk write requests before the data is written out. This can boost to write performance, but carries the slight risk that unwritten data in the write cache might be lost as a result of a power failure.
- If your ReadyNAS system has UPS protection, select the **Disable full data journaling**. You might lose data if a power failure suddenly occurs. This option substantially increases disk write performance.
- If you do not mind a long system check after a power failure, select **Disable journaling**. File system journaling allows disk checks of only a few seconds verses possibly an hour or longer without journaling. This option improves disk write performance slightly.
- If Windows NT 4.0 users do not access your ReadyNAS system, you can select **Optimize for OS X**. It provides the best performance in Mac OS X environments when connected to a ReadyNAS system through the CIFS file-sharing protocol. It is incompatible with Windows NT 4.0 computers.

- If your ReadyNAS system does not contain any files that are accessed by multiple users at once, such as a QuickBooks database, you can select **Enable fast CIFS writes**. It improves write performance with aggressive write-back caching over CIFS. Synchronized writes keep files that are accessed by multiple users at once in sync.
  - If you can always remove USB devices from the ReadyNAS system by properly unmounting them, select **Enable fast USB disk writes**. It speeds USB write access by allowing access to the USB device in asynchronous mode.
3. Click the **Apply** button.  
Your settings are saved.

## Set Network Settings

You can set information about the network your ReadyNAS system uses. You can also change the name of your ReadyNAS system so it is easier to identify.

### Set TCP/IP Address Information

You can enter information about the ReadyNAS system's TCP/IP address, including the Domain Name Server to use. Generally, the default settings do not need to be changed.

#### ➤ To set the TCP/IP address information:

1. From the FrontView main menu, select **Network > Interfaces**.
2. If your router automatically assigns an IP address is automatically to your ReadyNAS system, from the **IPv4 assignment** drop-down list, select **Use values from a DHCP server**.  
If you need to manually assign an IP address to your ReadyNAS system, from the **IPv4 assignment** drop-down list, select **Use values below** and follow these steps:
  - a. In the **IPv4 address** field, enter the IP address.
  - b. In the **Subnet mask** field, enter the subnet mask.
  - c. Click the **Apply** button.
  - d. From the FrontView main menu, select **Network > Global Settings**.
  - e. In the **Default gateway** field, enter the default gateway address
  - f. In the **Domain name server 1**, **Domain name server 2**, and **Domain name server 3** fields, enter the addresses for your DNS servers.
  - g. Click the **Apply** button.
3. If you changed your system's IP address, launch RAIDar, click **Rescan**, and reconnect to your system.

## Set Your ReadyNAS System to Work as a DHCP Server

DHCP (Dynamic Host Configuration Protocol) service simplifies management of a network by dynamically assigning IP addresses to new clients on a network.



### WARNING!

**Enabling DHCP service on a network that is already using another DHCP server creates conflicts that can interfere with your ability to access the Internet.**

You can enable your ReadyNAS storage system to work as a DHCP server. This feature is available only on ReadyNAS storage systems that are installed in networks where DHCP service is not already available.

If you want to use this device as a DHCP server, you first must specify static addresses in your network configuration settings. For more information, see [Set TCP/IP Address Information](#) on page 101.

#### ➤ To set your ReadyNAS system to work as a DHCP server:

1. From the FrontView main menu, select **Network > DHCP**.

If you already have DHCP service, a message displays telling you that this feature is not available on your ReadyNAS system.

If you do not currently have a DHCP service on your network, a DHCP details screen displays.

2. Select the **Enable DHCP service** check box and complete the fields below it.
3. Click the **Apply** button.

Your settings are saved.

## Change Host Name

The host name identifies your ReadyNAS system in alert messages, FrontView, the Mac OS X Finder, and the Windows Explorer. By default, it is NAS plus the last 4 bytes of your ReadyNAS system's MAC address.

#### ➤ To set your ReadyNAS system's name:

1. Select **Network > Global Settings**.
2. In the **Hostname** field, enter a new host name.
3. Click the **Apply** button.

Your settings are saved.

## Set Ethernet Options

You can set information about the Ethernet network the ReadyNAS system is on. Generally, the default settings do not need to be changed.

➤ **To set Ethernet options:**

1. From the FrontView main menu, select **Network > Interfaces**.
2. (Optional) If you need to force the ReadyNAS system to use either full-duplex or half-duplex, from the Speed/Duplex mode drop-down list, select an option.
3. (Optional) If you need to change the packet size from the default value, in the MTU field, enter a new packet size.
4. Click the **Apply** button.

Your settings are saved.

## Enable WINS Support

When you enable Windows Internet Name Service (WINS) support, even users who are not on your local network can access the ReadyNAS system. You can even set up the ReadyNAS system to be a WINS server.

➤ **To enable WINS support:**

1. From the FrontView main menu, select **Network > Interfaces**.
2. In the WINS server field, enter the address of the WINS server.
3. Click the **Apply** button.

Your settings are saved.

➤ **To use your ReadyNAS system as a WINS server:**

1. From the FrontView main menu, select **Network > Interfaces**.
2. Select the **Become a WINS server** option.
3. Click the **Apply** button.

Your settings are saved.

## Enable Jumbo Packet Support

Users can access the files on your ReadyNAS system faster if you enable jumbo packet support. Before you enable it, make sure your network's router and the computers on your network support jumbo packets.

➤ **To enable jumbo packet support:**

1. From the FrontView main menu, select **Network > Interfaces**.
2. In the **Performance Settings** pane, select **Enable jumbo frames**.
3. Click the **Apply** button.

Your settings are saved.

## View Log Files

You can view and download the ReadyNAS system's log files to diagnose problems. Viewing the log files in FrontView shows an overview of the most important information. Downloading the log files gives you more complete information.

➤ **To view log files:**

From the FrontView main menu, select **Status > Logs**.

Green indicates status information only. Yellow indicates a warning. Red indicates a dangerous situation that needs to be addressed.

➤ **To download complete log files:**

1. From the FrontView main menu, select **Status > Logs**.
2. Click the **Download All Logs** link.

The file downloads to your browser's default download location.



# Notification of Compliance

---



## NETGEAR Wired Products

### **Regulatory Compliance Information**

This section includes user requirements for operating this product in accordance with National laws for usage of radio spectrum and operation of radio devices. Failure of the end-user to comply with the applicable requirements may result in unlawful operation and adverse action against the end-user by the applicable National regulatory authority.

This product's firmware limits operation to only the channels allowed in a particular Region or Country. Therefore, all options described in this user's guide may not be available in your version of the product.

### **FCC Requirements for Operation in the United States**

#### **FCC Information to User**

This product does not contain any user serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### **FCC Guidelines for Human Exposure**

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

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

### **FCC Declaration Of Conformity**

We, NETGEAR, Inc., 350 East Plumeria Drive, San Jose, CA 95134, declare under our sole responsibility that the ReadyNAS Duo, NV+, and 1100 comply with Part 15 of FCC Rules.

Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

### **FCC Radio Frequency Interference Warnings & Instructions**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following methods:

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

Modifications made to the product, unless expressly approved by NETGEAR, Inc., could void the user's right to operate the equipment.

### **Canadian Department of Communications Radio Interference Regulations**

This digital apparatus, ReadyNAS Duo, NV+, and 1100, does not exceed the Class B limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

This Class [B] digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada

## European Union

The ReadyNAS Duo, NV+, and 1100 comply with essential requirements of EU EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC as supported by applying the following test methods and standards:

- EN55022: 2006 / A1: 2007
- EN55024: 1998 / A1: 2001 / A2 : 2003
- EN60950-1: 2005 2nd Edition
- EN 61000-3-2:2006
- EN 61000-3-3:1995 w/A1: 2001+A2: 2005

## GPL License Agreement

GPL may be included in this product; to view the GPL license agreement go to <ftp://downloads.netgear.com/files/GPLnotice.pdf>.

For GNU General Public License (GPL) related information, please visit [http://support.netgear.com/app/answers/detail/a\\_id/2649](http://support.netgear.com/app/answers/detail/a_id/2649) .

# Index

## A

- access control
  - AFP [50](#)
  - CIFS [50](#)
  - FTP [55](#)
  - HTTP [55](#)
  - NFS [52](#)
  - overview [47](#)
  - Rsync [56](#)
- access rights [42](#)
- adding disks
  - Flex-RAID volumes [21](#)
  - X-RAID [18](#)
- add-ons [99](#)
  - ReadyNAS Photos [75](#)
  - ReadyNAS Remote [66](#)
- admin password [38](#)
- AFP
  - access control [51](#)
  - enabling [43](#)
- albums, photo [75](#)

## B

- backing up
  - external disk drives [24](#)
  - Mac OS X [79](#)
  - ReadyNAS system [80](#)
  - scheduling [84](#)
  - settings [98](#)
- Bonjour
  - printing [90](#)
  - streaming [77](#)

## C

- CIFS
  - access control [48](#)
  - caching files [60](#)
  - enabling [43](#)
  - hiding other shares [59](#)
  - printing [90](#)
  - Recycle Bin [59](#)
- clock, setting [93](#)

- compliance [105](#)
- copying external disk drives [24](#)
- creating
  - groups [34](#)
  - users [29](#)
  - volumes [20](#)

## D

- DHCP server [101](#)
- disconnecting disk drives [24](#)
- discovery services [77](#)
- disk drives
  - copying external [24](#)
  - disconnecting [24](#)
  - formatting [24](#)
  - locating [24](#)
- disks
  - adding to Flex-RAID volumes [21](#)
  - configuring [16](#)
  - overview [16](#)
  - replacing in X-RAID [18](#)
- domain name server [101](#)
- domain security mode
  - access control [48](#)
  - creating shares [46](#)
  - overview [27](#)
- domain server [28](#)

## E

- email account [95](#)
- email addresses
  - admin [94](#), [95](#)
  - user [29](#), [30](#)
- emailing photos [76](#)
- Ethernet options, setting [103](#)
- exporting
  - groups [36](#)
  - users [36](#)

## F

- file ownership, resetting **62**
- file-sharing protocols
  - enabling **43**
  - managing **44**
  - overview **41**
  - supported **41**
- Firefly
  - password **72**
  - smart playlist **71**
- Flex-RAID **19**
- folder ownership, resetting **62**
- formatting disk drives **24**
- FrontView **12**
  - access rights icons **42**
  - launching **12, 13**
- FTP
  - access control **53**
  - accessing shares **65**
  - anonymous access **53**
  - character encoding **94**
  - enabling **43**
- full backup **85**

## G

- GIDs **34**
- group accounts **29**
- group IDs **34**
- groups
  - creating **34**
  - exporting **36**
  - importing **37**
  - managing **34**
  - user primary **29**

## H

- hiding shares **59**
- HTTP
  - access control **55**
  - enabling **43**
  - website **90**

## I

- importing
  - groups **37**
  - users **37**
- incremental backup **85**
- IP address **101**
- IPP printing **90**

- IPv4 assignment **101**
- iTunes streaming
  - password **72**
  - smart playlist **71**

## J

- journaling **100**
- jumbo packet support **104**

## L

- language, setting **94**
- Linux
  - accessing shares **65**
  - system requirements **7**
- locating
  - disk drives **24**
  - ReadyNAS systems **12**
- log files **104**
- logical volumes **16**

## M

- Mac OS X
  - accessing shares **64**
  - backing up **79**
  - optimizing for **100**
  - system requirements **7**
- mirrored RAID **19**

## N

- NFS
  - access control **52**
  - enabling **43**
  - syncing **60**
- NTP servers **93**

## O

- oplocks **60**
- opportunistic locking **60**

## P

- passwords
  - changing admin **38**
  - changing user **30, 31**
  - iTunes **72**
  - recovering admin **38**
  - shares **46**
  - user **30**

- performance **100**
- permissions
  - new files **61**
  - resetting **62**
- photos, sharing **75**
- physical volumes **16**
- playlists, smart **71**
- primary groups, user **29**
- printers **90**
- private home shares
  - choosing volume **32**
  - disabling **31**
  - managing **29**
  - Recycle Bin **33**

## Q

- quotas
  - shares **46**
  - user **30**
  - warning users **33**

## R

- RAID levels **19**
- RAIDar **10**
- read/write access **48**
- read-only access **48**
- ReadyNAS Photos **75**
- ReadyNAS Remote
  - accessing shares **66**
  - enabling **66**
  - installing **66**
- ReadyNAS Vault **80**
- rebooting **97**
- recovering admin password **38**
- Recycle Bin
  - CIFS **59**
  - private home shares **33**
- replacing disks
  - volumes **22**
  - X-RAID **18**
- resetting
  - admin password **38**
  - file and folder ownership **62**
  - permissions **62**
- restarting **97**
- restoring
  - backup jobs **86**
  - settings **98**
- Rsync, enabling **43**

## S

- scanning
  - iTunes **73**
  - ReadyDLNA **74**
  - TiVo **74**
  - Xbox **74**
- scheduling
  - backups **84**
  - shut down and start up **97**
- security mode **27**
- share security mode
  - access control **57**
  - creating shares **46**
  - overview **27**
- shares
  - access rights **42**
  - file-sharing protocols **41**
  - hiding **59**
  - user access control **47**
- shutdown
  - immediate **96**
  - rebooting **97**
  - scheduling **97**
- smart playlists **71**
- SMB, see CIFS
- snapshots **87**
- striped RAID **19**
- subnet mask **101**
- system requirements **7**

## T

- TCP/IP address **101**
- technical support **2**
- Time Machine backups **79**
- time, setting **93**
- trademarks **2**

## U

- UID **29**
- Unicode **94**
- UNIX
  - accessing shares **65**
  - system requirements **7**
- UPnP streaming **77**
- USB
  - devices **23**
- USB printers **90**

user access control

AFP **51**

CIFS **49**

FTP **54**

User ID **29**

user security mode

access control **48**

creating shares **46**

overview **27**

users

creating **29**

exporting **36**

importing **37**

share access control **47**

## V

volumes **16**

adding disks **21**

creating **20**

replacing disks **22**

## W

website, setting up **90**

Windows

accessing shares **64**

system requirements **7**

Windows Internet Name Service **103**

WINS support **103**

## X

X-RAID **17**