NETGEAR

ReadyNAS for Home RAIDiator 5.3

Software Manual

Models:

Duo v2
NV+ v2

350 East Plumeria Drive
San Jose, CA 95134
USA

September 2012
202-10896-04

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/general/contact/default.aspx.*

Trademarks

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.

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. © 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.

Table of Contents

Chapter 1 Getting Started

Quick-Start Guide 7
Additional Documentation 7
Diskless Systems 7
RAIDar 8
Setup Wizard 11
Language 13
Administrator Password 14
Change the Administrator Password 14
Recover Your Administrator Password 15
Register Your System 16

Chapter 2 Disk Configuration

Basic Disk Configuration Concepts 19
RAID 19
Volumes 19
X-RAID2 20
Flex-RAID 21
Manage Disk Configuration 22
Expand a Volume 22
Change RAID Modes 23

Chapter 3 Shares

Basic Share Concepts 30
Data Organization 30
File and Folder Names 30
File-Sharing Protocols 31
Access Rights 32
Create Shares 32
Manage Shares 33
View Shares 33
Fine-Tune Share Access 34
Reset Permissions for Files and Folders 35
Create a Folder 35
Delete a Folder 36
Remove a Share 36
Access Shares Remotely 37

Access Shares Using a Windows Device 37
Access Shares Using HTTP with Webshare 38
Access Shares Using Rsync 38
Access Shares Using a Mac OS X Device 39
Access Shares Using a Linux or Unix Device 40
ReadyDROP 41

Chapter 4 Users and Groups

Basic User and Group Concepts 49
User and Group Account Limitations 49
User and Group Management Modes 49
Local Users Mode 51
Create User Accounts 51
Edit User Accounts 52
Delete User Accounts 53
Create Groups 54
Edit Groups 55
Delete Groups 56

Chapter 5 System Management

System Overview 58
Set the Clock 58
Manage File-Sharing Protocols and Services 59
UPnP Discovery Service 60
Set Up TiVo 60
Power 61
Disk Spin-Down and Power Timer 61
Manually Shut Down the System 62
UPS 63
Update Firmware 63
Update Firmware Remotely 64
Update Firmware Locally 64
Network Settings 66
Ethernet 66
DNS 68
Host Name and Workgroup 69
USB Storage Devices 71
Monitor 72
System Information 72
Check the Disk Status with Disk Smart 72
Alerts 73
System Logs 74
Add-ons 75
Manage Add-ons 75
Find and Install Add-ons Using Dashboard 76
Install Standalone Add-ons 77
NETGEAR genie 78

Chapter 6 Backup and Recovery

Back Up or Restore System Configuration 80
Basic Data Backup Concepts 80
Back Up Your ReadyNAS System with Vault 81
Back Up Data onto a Local Device 82
Manage Backup Jobs 86
Edit a Backup Job 86
Delete a Backup Job 87
Manually Start a Backup Job 87
View a Backup Log 88
Configure the Backup Button 88
Time Machine 89
Recover Backed Up Data from ReadyNAS Vault 91
Recover Backed Up Data from a Network-Attached Device 91

Appendix A Notification of Compliance

Index

Getting Started

1

This *NETGEAR® ReadyNAS for Home RAIDiator 5.3 Software Manual* describes how to configure and manage your ReadyNAS storage system.

Your ReadyNAS® storage system relies on the following software applications:

- **RAIDar**. Use this setup utility to find your ReadyNAS system on your local area network and launch Dashboard.
- **Dashboard**. Use this browser-based interface to configure and manage your ReadyNAS system.

This chapter includes the following sections:

- *Quick-Start Guide*
- *Additional Documentation*
- *Diskless Systems*
- *RAIDar*
- *Setup Wizard*
- *Administrator Password*
- *Diskless Systems*

Quick-Start Guide

This manual provides conceptual information about storage systems, detailed instructions about using your system, and recommendations about configuring, managing, and backing up your system. NETGEAR recommends that you read this manual to make the best use of your storage system.

To quickly start using your system, review the following sections in this order:

1. *RAIDar* on page 8. You use RAIDar to discover your storage system on your network.
2. *Setup Wizard* on page 11. This wizard guides you through initial setup of your system in a few simple screens.
3. *Create Shares* on page 32. Shares are similar to folders or directories and are the way you organize the data you store on your ReadyNAS system.
4. *Create User Accounts* on page 51. You create a user account for each person that you want to let access your ReadyNAS system.
5. *Basic Data Backup Concepts* on page 80. You can back up the data you store on your ReadyNAS system, and you can use your ReadyNAS system to back up data you store on other devices.

Additional Documentation

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

For information about your system's hardware, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*, which is available at *http://www.readynas.com/documentation*.

Diskless Systems

If you have a diskless ReadyNAS storage system, you must first install and format at least one disk before you can use RAIDar or Dashboard. For more information, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual.*

To obtain support from NETGEAR technical support, you must use disks included on the Hardware Compatibility List in your ReadyNAS system. The list is available at *http://www.readynas.com/hard_disk_hcl*.

RAIDar

RAIDar is a software application that you use to discover ReadyNAS storage systems on your network. RAIDar is included on the *Resource CD* that came with your system. It includes versions for Windows, Mac, and Linux operating systems. It is also available at *http://www.readynas.com/duo_nvplus_start*.

RAIDar displays several icons to help you determine the status of your system, as shown in the following figure.

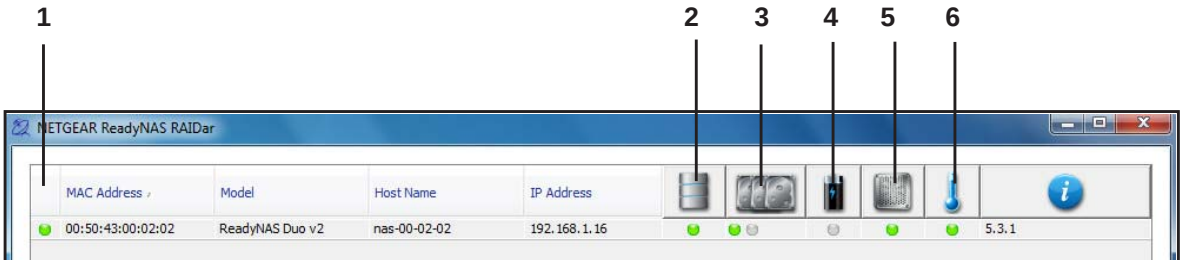


Figure 1. RAIDar icons

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

The following table provides a description of each LED icon.

Table 1. RAIDar LED icon descriptions

LED icon	Description
	No disk or device is attached.
	The device is operating normally.
	The device failed or needs attention.
	This disk is a spare disk on standby. If a disk fails, this disk takes over automatically.
(Blinking)	This disk is currently resyncing.

Table 1. RAIDar LED icon descriptions (Continued)

LED icon	Description
	The volume is in life-support mode. Life-support mode happens when the volume encounters multiple disk failures and might be dead. The ReadyNAS system blocks it from being marked dead in case someone removed the wrong disk while the system was running. If the wrong disk was pulled out, shut down the system immediately, reconnect the disk, and restart the system. **Note:** If you reconnect the disk while the system is running, the disk is marked as a newly added disk and all data on that disk will be lost during the initialization process.
	A lengthy background task such as a system update is in progress.

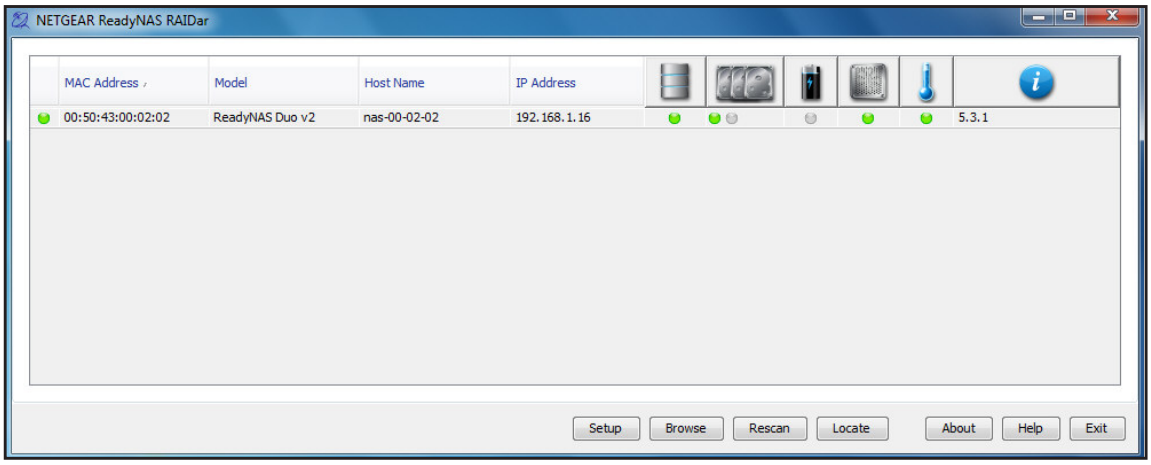
You can use the following buttons to learn more about the ReadyNAS system or systems on your network:

- **Setup**. Launches Dashboard for the highlighted system.
- **Browse**. Displays the shares available on the highlighted system. This feature works on the Windows platform only.
- **Rescan**. Updates the list of ReadyNAS systems on the network and updates the status of each system it discovers.
- **Locate**. Causes the LEDs on the highlighted system to blink. Locate is useful if you have multiple ReadyNAS storage systems and you want to determine which RAIDar entry corresponds to which physical system.
- **About**. Displays RAIDar information.
- **Help**. Displays the help screen.
- **Exit**. Closes RAIDar.

➢ **To discover your ReadyNAS system and launch Dashboard:**

1. Install the appropriate version of RAIDar on a computer that is connected to the same local area network (LAN) as your ReadyNAS storage system.
2. If you are using Windows XP before SP2, disable the Internet connection firewall.
3. Launch the RAIDar utility.

RAIDar displays a window that lists the ReadyNAS system or systems on your network and provides details about the status of each system it discovers.



The default IP configuration is set to DHCP, which is how home routers assign IP addresses by default.

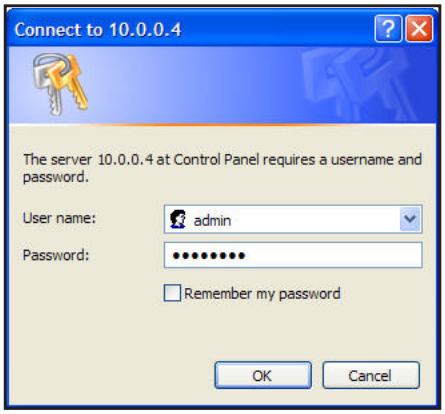
If you are not using DHCP on your router, or if it is not working correctly, your storage system cannot get an IP address. In that case, your system uses 192.168.168.168. If this situation occurs, you must make a direct connection between your storage system and your computer. To establish this connection, follow your operating system's instructions for assigning a static IP address to your computer in the 192.168.168 subnet.

If your ReadyNAS system is not detected, check the following and click **Rescan** to try again:

- Make sure the ReadyNAS device is turned on and is connected to your network.
- Make sure your client computer that is running RAIDar is on the same subnet as the ReadyNAS device.
- If you are running RAIDar on Windows XP before SP2, disable the Internet connection firewall.

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

RAIDar opens your default browser and prompts you to log in to the storage system.



5. Log in to your system using the default login credentials:
   - **Default user name**. admin
   - **Default password**. password

   Both user name and password are case-sensitive.

   The first time you connect to your ReadyNAS system, a Setup Wizard displays to guide you through initial configuration. This wizard also displays the first time you log in to your system after you perform a factory default reboot. For more information about factory default reboots, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*.

   Any other time you log in to your system, Dashboard displays.

Setup Wizard

When you launch Dashboard for the first time, a setup wizard displays to guide you through the setup process.

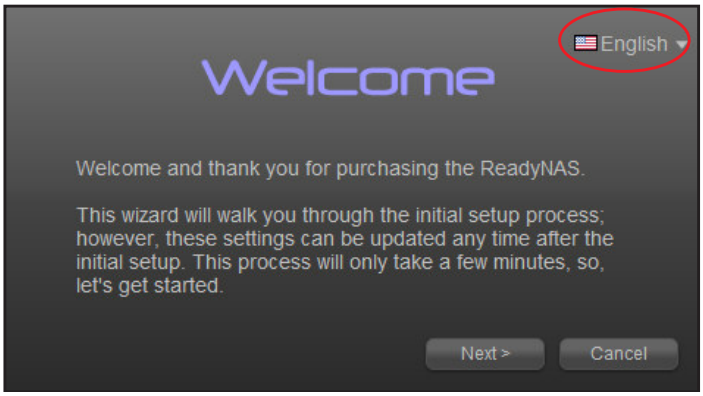


Figure 2. Setup wizard Welcome screen

The wizard guides you step-by-step through the configuration process, assisting you in quickly integrating your ReadyNAS storage system into your network. To choose a different language for the setup wizard, click the language drop-down menu in the upper-right corner.

Follow the wizard's prompts to configure the following settings:

- **Time and date**. For more information, see *Set the Clock* on page 58.
- **Alert contact**. For more information, see *Email Alert Contacts* on page 73.
- **Host name and workgroup**. For more information, see *Host Name and Workgroup* on page 69.
- **Administrator password and password recovery question and answer**. For more information, see *Network Settings* on page 66.
- **Product registration**. For more information, see *Diskless Systems* on page 7.

When you complete the wizard, Dashboard displays. The following figure shows the Dashboard home screen.

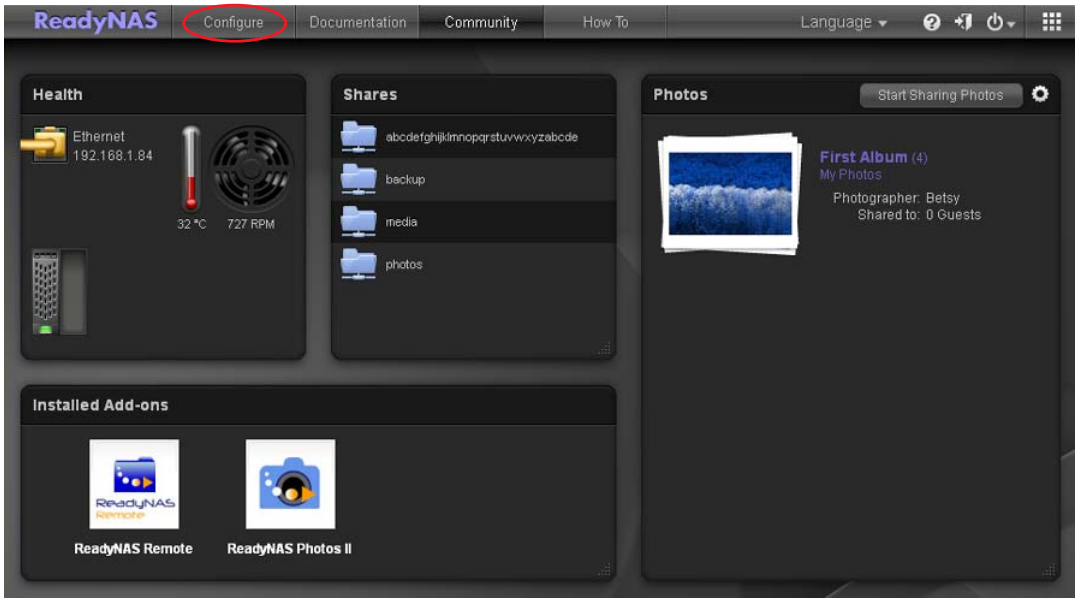


Figure 3. Dashboard home screen

Click the **Configure** button to access the screens that let you configure, manage, and monitor your ReadyNAS storage system.

When you click the Configure button, the Overview screen displays.

Figure 4. ReadyNAS Dashboard Overview screen

The navigation bar across the top of the screen helps you navigate through Dashboard. To return to the Dashboard home screen, click the **Dashboard** button.

This screen provides you with a quick overview of your system's status and provides access to the following information:

- Hardware information
- Services
- Network
- Volumes

Hover your cursor over a status LED icon to display device information, or click an LED icon or the date and time data to display the related Dashboard screen.

Language

By default, the language setting is Auto, which uses the same language as your browser.

If you want to change the language setting, you can do so. To ensure that your ReadyNAS storage system correctly displays file names, configure your system to use the appropriate character set. For example, selecting Japanese allows the ReadyNAS to support files with Japanese names in Windows Explorer.

NETGEAR recommends selecting a language based on the region where the device is being used.

➢ **To configure language settings:**

1. On the upper-right corner of Dashboard, click the **Language** button.

2. Select a language from the drop-down menu.

Administrator Password

The administrator can access any file on the ReadyNAS system, including private home shares. It is important to safeguard the administrator password and to change it regularly to protect your data.

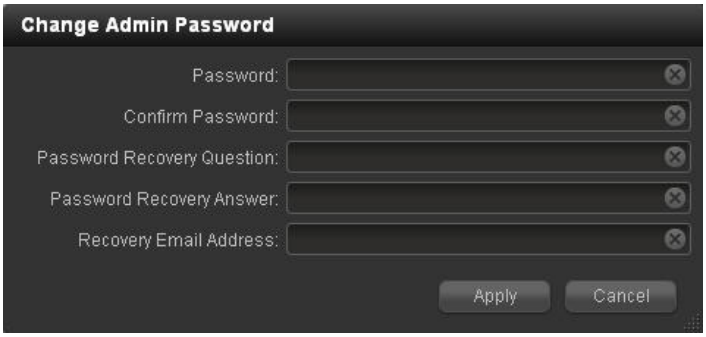
Change the Administrator Password

Be sure to choose an administrator password that is different from the default password and keep it in a safe place. Anyone who obtains this password can change settings or erase data stored on your ReadyNAS system.

➢ **To change the administrator password:**

1. Select **Configure > Profile** and select **Change Admin Password** from the drop-down menu.

The **Change Admin Password** dialog box displays.



2. Complete the following fields:
   - **Password**. Enter a new password. Your administrator password can have a maximum of 255 characters.
   - **Confirm Password**. Reenter your new password.
   - **Password Recovery Question**. Choose a question that few people can answer. For example, you might enter *First dog's name?* or *Best friend in Kindergarten?* as your password recovery question. Your password recovery question can have a maximum of 255 characters.

- **Password Recovery Answer**. Enter the answer to the question you provided in the Password Recovery Question field. Your password recovery answer can have a maximum of 255 characters
- **Recovery Email Address**. Enter the email address to which you want a reset password to be sent.

3. Click the **Apply** button.

   Your settings are saved.

Recover Your Administrator Password

You can recover a lost or forgotten administrator password in two ways:

- **Use the NETGEAR password recovery tool**. This web-based tool requires that you enable administrator password recovery on your ReadyNAS storage system before you can use it. For more information, see *Change the Administrator Password* on page 14.
- **Perform an OS reinstall reboot**. This process reinstalls the firmware on your system and resets the administrator user name and password to factory defaults.

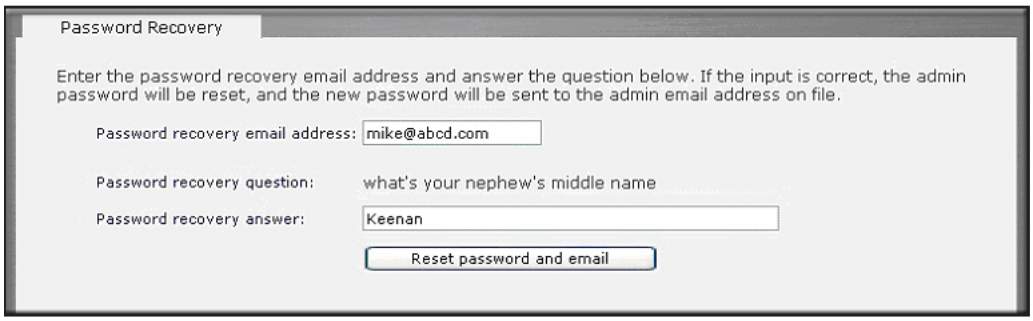
Recover Your Administrator Password Using the NETGEAR Password Recovery Tool

This procedure is an option only if you enabled password recovery by providing a password recovery question, answer, and email address as described in *Change the Administrator Password* on page 14. If you lost your password but did not enable administrator password recovery, see *Recover Your Administrator Password Using an OS Reinstall Reboot* on page 16.

➢ **To recover your administrator password:**

1. Using a web browser, visit https://<ReadyNAS_IP_address>/password_recovery.

   <ReadyNAS_IP_address> is the IP address of your ReadyNAS system.



2. Enter the email address and password recovery answer that you enabled on your ReadyNAS storage system and click the **Reset password and email** button.

   NETGEAR resets your administrator password and sends an email message with the new password to you.

Recover Your Administrator Password Using an OS Reinstall Reboot

This process does not remove data from the system, but resets the administrator password to the factory default password, which is password.

- **To recover your administrator password using an OS reinstall reboot:**

  Perform an OS reinstall reboot on your storage system.

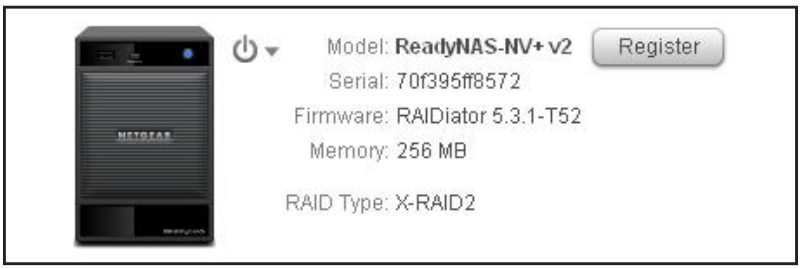
  The process for performing an OS reinstall reset reboot varies by storage system. For more information about how to perform a factory reset reboot, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*.

Register Your System

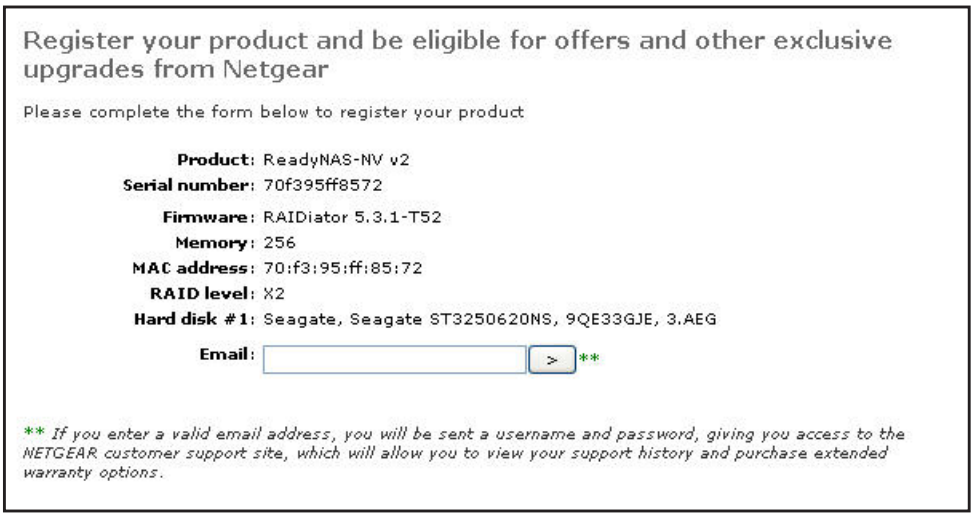
You must register your product before you can use NETGEAR telephone support. If you did not register your ReadyNAS system during the setup wizard process, you can register it using Dashboard or by accessing the NETGEAR Product Registration website directly.

- **To register your system using Dashboard:**

1. Click **Configure > System** and expand the Hardware section.



2. Click the **Register** button.



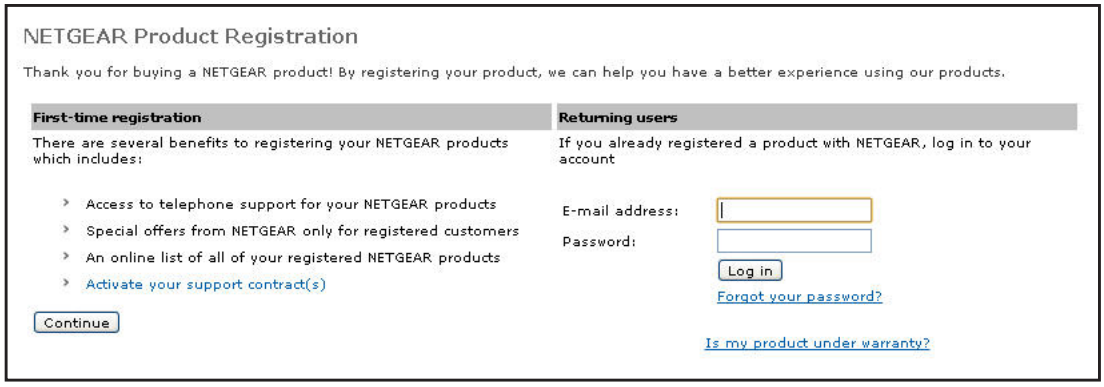
3. Enter a valid email address in the Email field and click the **>** button.
4. Follow the prompts.

   Your system is registered.

➢ **To register your system using the NETGEAR Product Registration website:**

1. Locate the serial number on the label of your product.
2. Using a browser, visit *http://www.NETGEAR.com/register*.

   The product registration web page displays.



   If you have never registered a NETGEAR product, click the **Continue** button.

   If you have registered a NETGEAR product in the past, enter your email address and password and click the **Log in** button.

3. Follow the prompts.

   Your system is registered.

2 Disk Configuration

This chapter describes how to configure the disks in your ReadyNAS storage system. It contains the following sections:

- *Basic Disk Configuration Concepts*
- *Manage Disk Configuration*

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 various 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 tradeoff of 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 also reduce system performance.

Your ReadyNAS storage system supports X-RAID2™, a proprietary single-volume RAID architecture that is easy to administer, and Flex-RAID, which allows you to format your disks in many 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. In this context, 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-RAID2

X-RAID2 is a RAID technology that expands automatically and is available only on ReadyNAS systems. With X-RAID2, you do not need to know intricate details about RAID to administer your system. X-RAID2 allows you to add storage space without reformatting your drives or moving your data to another location. Because the expansion happens online, you can continue to use your ReadyNAS system while the underlying volume capacity increases.

Because X-RAID2 uses a single-volume architecture, if you configure your hard disk drives to use X-RAID2, your storage system has only one volume that is made up of all installed hard disk drives. X-RAID2's single-volume architecture has two major advantages:

- Easy system management
- Auto expansion

With typical RAID formatting, to add disks or replace disks with larger capacity disks, you must back up the data to another system, add a disk, reformat the RAID volume, and restore the data to the new RAID volume. With X-RAID2, none of those administrative tasks are required. Instead, with X-RAID2, your volume automatically expands to accommodate additional disks or larger capacity disks when you replace smaller capacity disks.

With X-RAID2, you can start out with one hard disk, add a second disk for data protection, then add more disks for additional capacity, and X-RAID2 accommodates the new disks automatically. You can replace existing disks with larger capacity disks and X-RAID2 automatically accommodates the new disks.

X-RAID2 requires a minimum of two hard disks to provide protection against disk failure. If you have a one-disk X-RAID2 storage system and want protection from disk failure, you must add a second disk at least as large as the first. It can be added while the system is running.

X-RAID2 uses the first disk to store data, and the second disk to store parity information that allows it to re-create data if a disk fails in this two-disk system, the usable storage space is one disk. In a three-disk system, the usable storage space is two disks, and in a four-disk volume, the usable storage space is three disks.

The following figure illustrates how X-RAID2 uses new disks.

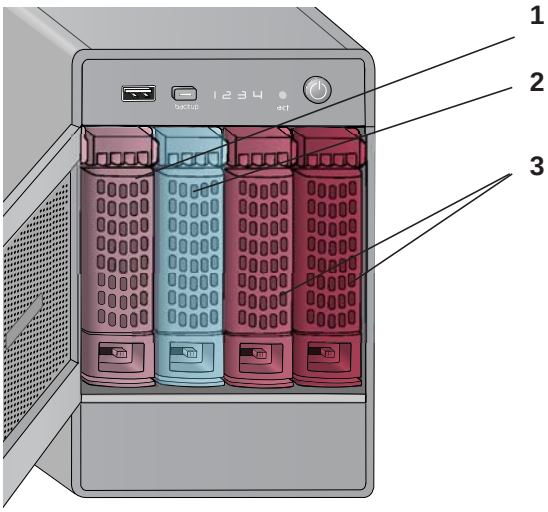


Figure 5. X-RAID2 disk usage

1. Initial storage space
2. Data protection
3. Additional storage space

Flex-RAID

Flex-RAID technology allows you to choose from among several industry-standard RAID levels:

- **RAID 0**. This RAID level is the simplest and is misnamed, because it does not offer redundancy to protect your data from loss if one disk fails. RAID 0 distributes data across multiple disks, which allows it to offer better performance than disks that do not use RAID formatting. The total capacity of your storage system equals the capacity of all of your disk drives.
- **RAID 1**. This RAID level provides full redundancy of your data, because it duplicates data across multiple disks. In RAID 1, exactly the same data is stored on two or more disks at all times. RAID 1 protects your data from loss if one disk fails. RAID 1 requires a minimum of two disks and an even number of disks. In a two-disk system, the total capacity of your storage system equals the capacity of your smallest disk.
- **RAID 5**. Supported on ReadyNAS storage systems with at least four drive bays, RAID 5 uses one disk to protect you from data loss if one disk fails. The total capacity of your storage system equals the capacity of all your disks minus the capacity of one disk.

Flex-RAID also lets you choose JBOD formatting for your disks. JBOD, which is short for just a bunch of disks, refers to a set of hard disks that are not configured using RAID technology and that the computer treats as individual disks. JBOD does not offer any data protection if a disk fails. However, some people choose to use JBOD because it maximizes storage capacity. It maximizes storage capacity because you do not use any storage space for data protection when you configure your disks as JBOD.

Manage Disk Configuration

You can use Dashboard to manage the configuration of the hard disks installed in your system.

Expand a Volume

Dashboard automatically manages volume expansion when you add a disk to your ReadyNAS storage system. This expansion happens in the background while you continue to use your ReadyNAS system. The volume expansion process can take several hours. If you set up email notifications for your system, you receive an email message when the expansion process finishes. For more information about alert notifications, see *Alerts* on page 73.

Expand an X-RAID2 Volume

To expand your X-RAID2 volume, add a disk to your ReadyNAS storage system. The volume is expanded in the background while you continue to use your storage system. For more information about how to add a disk to your system, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*.

If you are adding a second disk, the new disk is used for data protection. If you are adding a third or fourth disk, the new disk is used for additional storage capacity. For more information, see *X-RAID2* on page 20.

Expand Flex-RAID Volumes

To expand your Flex-RAID volume or volumes, add a disk to your ReadyNAS storage system. For more information about how to add a disk to your system, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*.

The volume is expanded in the background while you continue to use your storage system. The following table describes how the ReadyNAS storage system handles expansion.

Table 2. Flex-RAID volume expansion behavior

Flex-RAID format in use	Number of disks currently installed	Number of disks added	Volume expansion behavior
RAID 0	Any	Any	Another RAID 0 volume is created for each new disk.
RAID 1	2	1	Another RAID 1 volume is created made up of the new disk. This volume has no data protection because RAID 1 requires two disks per volume to offer data protection.
	2	2	Another RAID 1 volume is created.
	3	1	The new disk is added to existing second volume; that volume changes from an unmirrored state (because it had only one disk) to a mirrored state. This means that the fourth disk is used for data protection, not storage capacity.

Table 2. Flex-RAID volume expansion behavior (Continued)

Flex-RAID format in use	Number of disks currently installed	Number of disks added	Volume expansion behavior
RAID 5	3	1	The new disk is added to the existing volume.
JBOD	Any	Any	A new JBOD volume is created for each new disk.

Change RAID Modes

You can change the RAID mode that your ReadyNAS storage system uses. Because this process erases all data, if data is stored on your system, you must first back up the data to another storage device before changing the RAID format.

The process involves resetting your ReadyNAS storage system to factory default settings and using RAIDar to configure the volume during a 10-minute delay during boot.

Change from Flex-RAID to X-RAID2

You can reconfigure your ReadyNAS system from Flex-RAID mode to X-RAID2 mode.

➢ **To change from Flex-RAID to X-RAID2:**

1. If any data is stored on your system, back up your data.

   For more information, see *Chapter 6, Backup and Recovery*.

2. Perform a factory reset reboot.

WARNING!

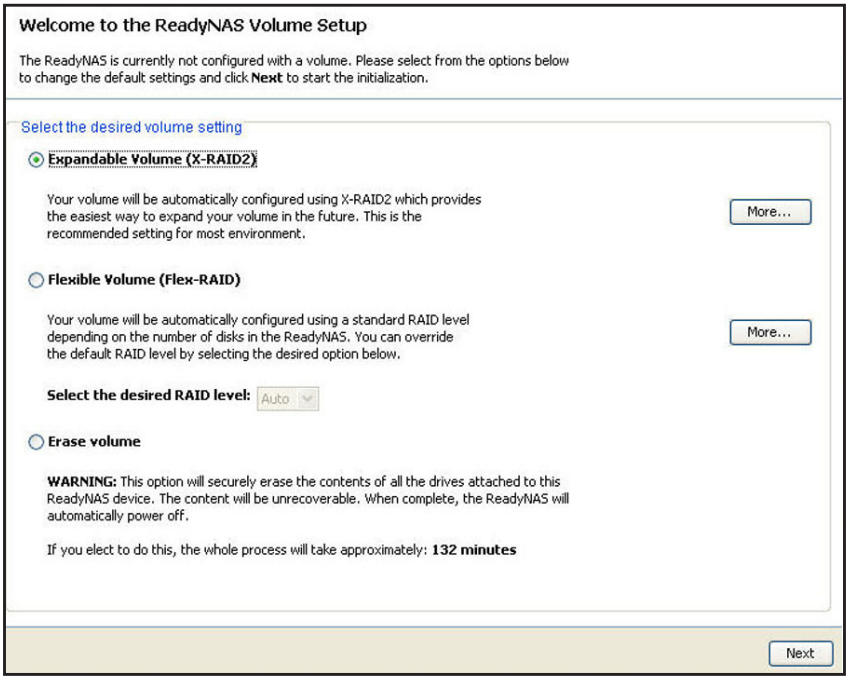
Setting your ReadyNAS system to its factory defaults erases all data and configuration settings.

   The process for performing a factory reset reboot varies by storage system. For more information about how to perform a factory reset reboot, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*.

   During the factory reboot process, you have a 10-minute window to choose a RAID configuration. RAIDar sends a prompt to click the Setup button during this 10-minute time frame.

3. Launch RAIDar, highlight your storage system, and click the **Setup** button.

The ReadyNAS Volume Setup screen displays.



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

4. Select the **Expandable Volume (X-RAID2)** radio button.
5. (Optional) Click a **More** button to learn more about X-RAID2 or Flex-RAID.

   A pop-up window displays. Click the **OK** button to close it.
6. Click the **Next** button.

   You are prompted to confirm the volume creation command.
7. Click the **OK** button.

   The volume is formatted. Formatting can take quite a while, depending on the size of your hard disk drives.
8. (Optional) Restore any backed-up data to the reformatted disks.

   For more information, see *Chapter 6, Backup and Recovery*.

Change from X-RAID2 to Flex-RAID

You can reconfigure your system from X-RAID2 mode (the factory default mode) to Flex-RAID mode.

➢ **To change from X-RAID2 to Flex-RAID:**

1. If any data is stored on your system, back up your data.

   For more information, see the *Chapter 6, Backup and Recovery*.

2. Perform a factory reset reboot.

WARNING!

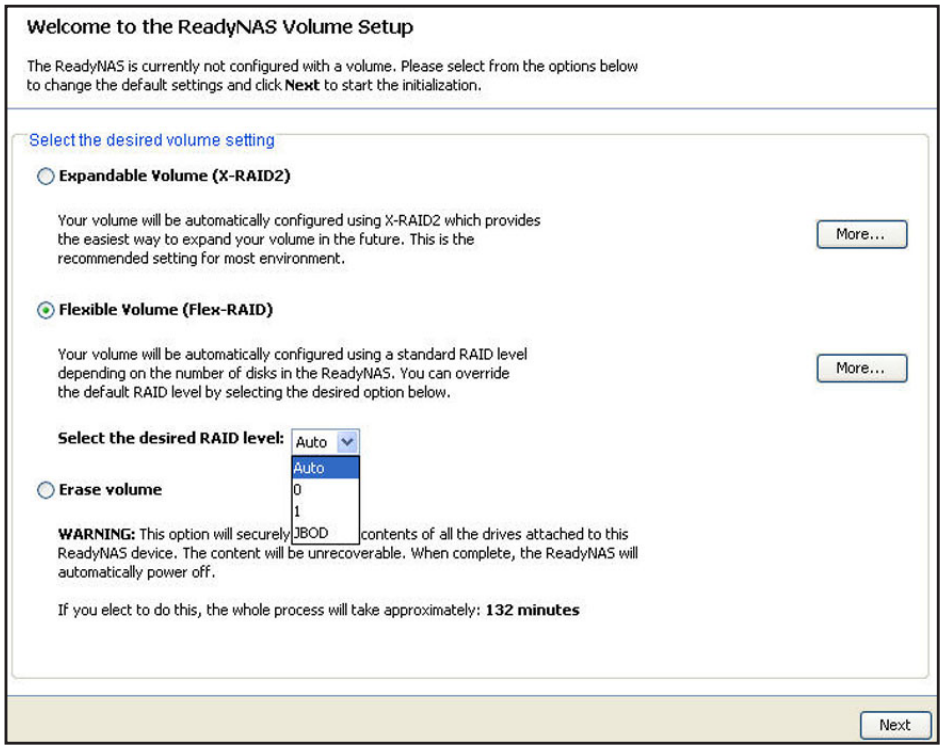
Setting your ReadyNAS system to its factory defaults erases all data and configuration settings.

The process for performing a factory reset reboot varies by storage system. For more information about how to perform a factory reset reboot, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*.

During the factory reboot process, you have a 10-minute window to choose a RAID configuration. RAIDar sends a prompt to click the Setup button during this 10-minute time frame.

3. Launch RAIDar, highlight your storage system, and click the **Setup** button.

   The ReadyNAS Volume Setup screen displays.



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

4. Select the **Flexible Volume (Flex-RAID)** radio button.
5. (Optional) Click a **More** button to learn more about X-RAID2 or Flex-RAID.

   A pop-up window displays. Click the **OK** button to close it.
6. From the Select the desired RAID level drop-down menu, select a RAID level or JBOD formatting.

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

Number of installed disks	RAID level automatically chosen
1	RAID 0
2	RAID 1
3	RAID 5
4	

7. Click the **Next** button.

   A dialog box displays prompting you to confirm the volume creation command.
8. Click the **OK** button.

   The volume is formatted. Formatting can take quite a while, depending on the size of your hard disk drives.
9. (Optional) Restore any backed-up data to the reformatted disks.

   For more information, see *Chapter 6, Backup and Recovery*.

Change to a Different Flex-RAID Format

Flex-RAID offers you several different disk formats, depending on the number of disks installed in your ReadyNAS storage system. For more information, see *Flex-RAID* on page 21.

You can reconfigure your system to use a different Flex-RAID format.

➢ **To change Flex-RAID disk formatting:**

1. If any data is stored on your system, back up your data.

   For more information, see the *Chapter 6, Backup and Recovery*.
2. Perform a factory reset reboot.

WARNING!

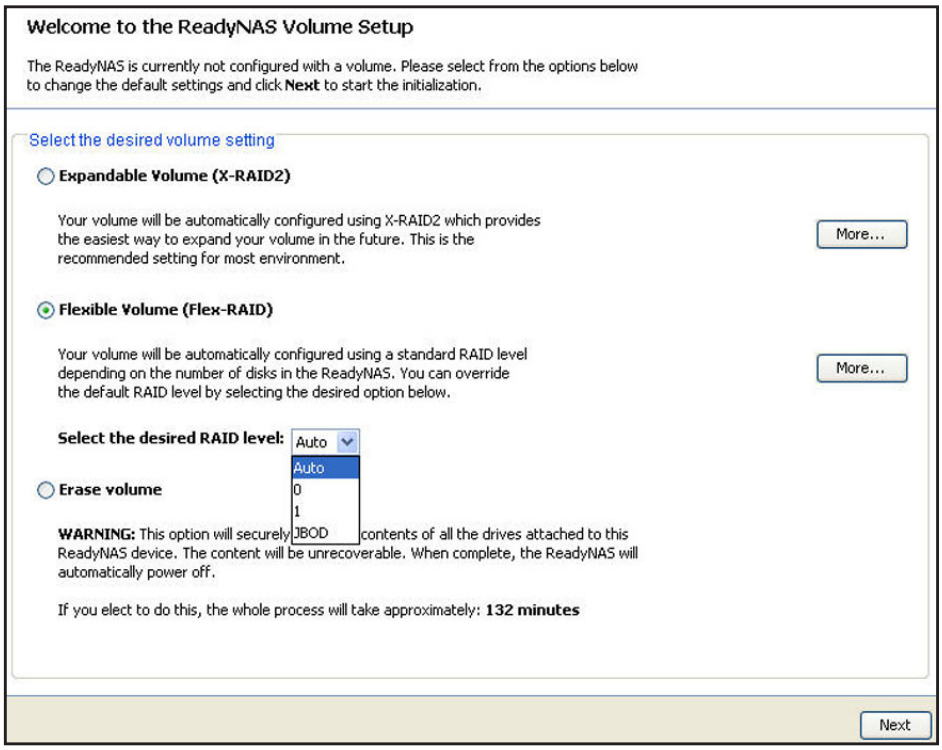
Setting your ReadyNAS system to its factory defaults erases all data and configuration settings.

The process for performing a factory reset reboot varies by storage system. For more information about how to perform a factory reset reboot, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*.

During the factory reboot process, you have a 10-minute window to choose a RAID configuration. RAIDar sends a prompt to click the Setup button during this 10-minute time frame.

3. Launch RAIDar, highlight your storage system, and click the **Setup** button.

   The ReadyNAS Volume Setup screen displays.



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

4. Select the **Flexible Volume (Flex-RAID)** radio button.
5. (Optional) Click a **More** button to learn more about X-RAID2 or Flex-RAID.

   A pop-up window displays. Click the **OK** button to close it.

6. From the Select the desired RAID level drop-down menu, select a RAID level or JBOD formatting.

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

Number of installed disks	RAID level automatically chosen
1	RAID 0
2	RAID 1
3	RAID 5
4	

7. Click the **Next** button.

   A dialog box displays prompting you to confirm the volume creation command.

8. Click the **OK** button.

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

9. (Optional) Restore any backed-up data to the reformatted disks.

   For more information, see *Chapter 6, Backup and Recovery*.

3 Shares

This chapter describes how to create, manage, and access shares on your storage system. This chapter includes the following sections:

- *Basic Share Concepts*
- *Create Shares*
- *Manage Shares*
- *Access Shares Remotely*

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 and Folder Names

A share can contain folders to help you organize your data and files that contain your data. Ensure that the files stored on your ReadyNAS system use file and folder names with no more than 255 characters if all characters in the file or folder name are alphanumeric. If you use other kinds of characters, the maximum length might be reduced. For example, if a file or folder name uses Kanji or Hanzi characters, the maximum file name length might be 83 characters.

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 3. Supported file-sharing protocols

Protocol	Description	Recommendation
AFP (Apple File Protocol)	Mac OS 9 and Mac OS X computers use AFP. 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.
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 access your storage system, enable this protocol.
FTP (File Transfer Protocol) and FTPS (FTP with SSL encryption)	Many public file upload and download sites use FTP.	If users access your storage system using FTP, enable this protocol.
HTTP (Hypertext Transfer Protocol and HTTPS (HTTP with SSL encryption)	Used on the world-wide web.	If users access your storage system from a device with a web browser, including a smartphone or tablet computer, enable this protocol.
NFS (Network File Service)	Linux and Unix computers use NFS. Your ReadyNAS system supports NFS v3 over UDP and TCP.	If Linux or Unix users access your storage system, enable this protocol.
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 access your storage system from a device that supports Rsync, enable this protocol.

Access Rights

For each share you create, you can specify the access right to that share for each user. The following table lists access rights options available to you.

Table 4. Access rights options

Access right	Description
Read-only	The user with this permission can read files on this share, but cannot edit or create files on this share.
Read/write	A user with this permission can read, edit, and create files on this share.
Read-only for everyone with exceptions	Access to this share is read-only for all users except for one or more users who are granted read/write permission.
Read/write for everyone with exceptions	Access to this share is read/write for all users except for one or more users who are granted read-only permission.

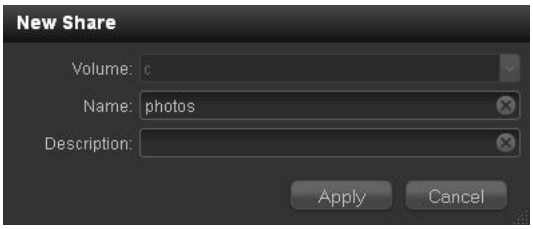
Create Shares

By default, new shares have the SMB and AFP file-sharing protocols enabled with read/write access rights granted to everyone.

➢ **To create a share:**

1. Select **Configure > Shares**.

2. Click the **New Share** icon.



3. Enter the following information about the new share:
   - **Volume**. If your system has only one volume, this drop-down menu is dimmed. If you have more than one volume, choose a volume from the drop-down menu.
   - **Name**. Enter a name for the new share. Share names can be a maximum of 31 characters in most non-Asian languages. If you use Asian language characters, the limit is lower. You can use most alpha, numeric, and punctuation characters for a share name.
   - (**Optional) Description**. Enter a description for the new share. Share descriptions can be a maximum of 255 characters. You can use any characters for a share description.
4. Click the **Apply** button.

   The share is created.

Manage Shares

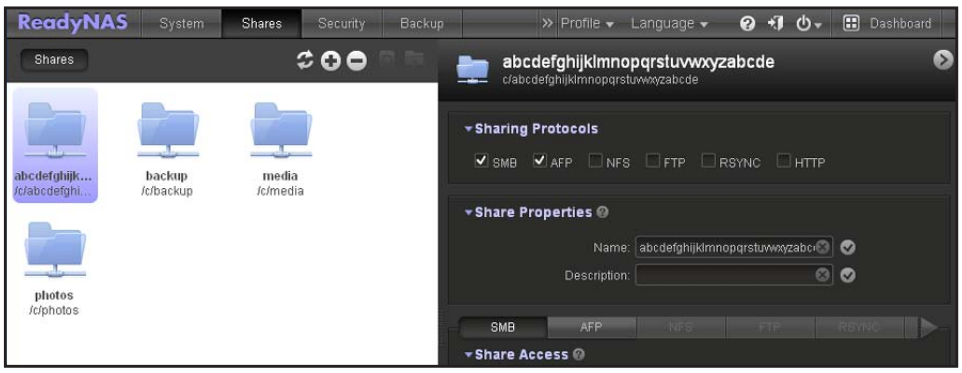
You can enable or disable all file-sharing protocols and access rights settings on each share on your ReadyNAS storage system.

View Shares

Use Dashboard to view shares that exist on your ReadyNAS system.

➢ **To view shares:**

1. Select **Configure > Shares**.



2. Select a share, and click the expand and collapse icons in the pane on the right to navigate through the shares, folders, and files on your ReadyNAS system.

Fine-Tune Share Access

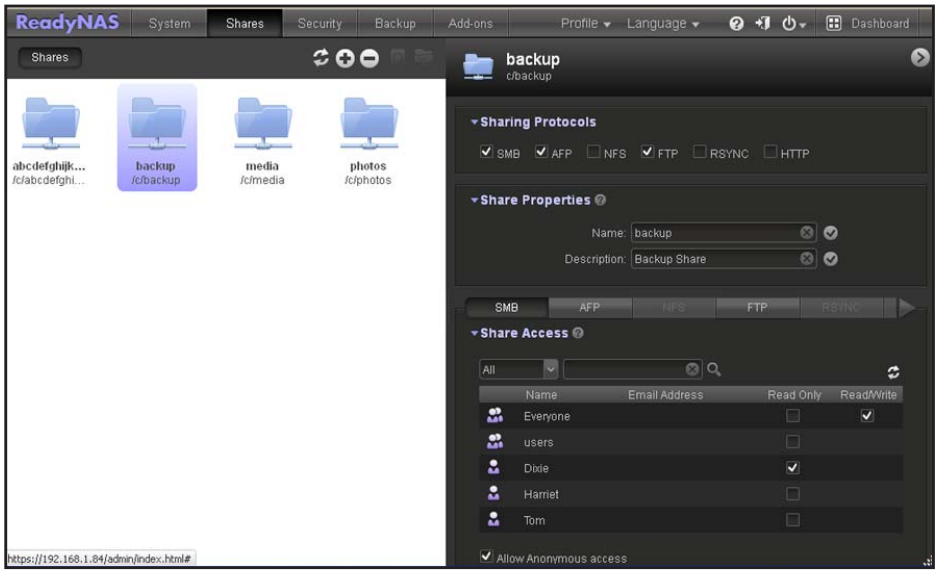
Use Dashboard to fine-tune how shares can be accessed. You can enable or disable all file-sharing protocols and grant or restrict access rights for each share and user. For example, you might want to grant a user read/write access rights on one share but read-only access rights on another share.

For more information about creating and managing users, see *Chapter 4, Users and Groups*.

For information about specifying services, see *Manage File-Sharing Protocols and Services* on page 59.

➢ **To fine-tune share access:**

1. Select **Configure > Shares**.



2. Select the share that you want to work with.
3. To specify the sharing protocols, select the check boxes for the protocols that you want to allow.

   By default, the SMB and AFP check boxes are selected. If you clear those check marks, no one can access this share remotely using those file-sharing protocols from a network-attached device (like a laptop or tablet). If you want to allow additional protocols, such as FTP or HTTP, select those check boxes.

   If you select a share that is currently not enabled for your system, selecting it here enables it for your entire storage system. For more information about global share settings, see *Manage File-Sharing Protocols and Services* on page 59.
4. (Optional) In the Share Properties Name and Description fields, type the name and description of the share.
5. (Optional) In the Share Access drop-down menu, select **All**, **Users**, or **Groups**.

   These access rights apply only to this share.

If you select Users, you can select either the Read Only or Read/Write check box for each user. For example, the figure in step 1 shows that the administrator selected the Read Only check box for user Dixie. This means that all users except Dixie have read/write permission for the backup share.

To set up anonymous access, select the **Allow Anonymous access** check box, and specify a user and IP address in the fields provided.

6. (Optional) Specify the Protocol-specific settings.
7. (Optional) Turn ReadyDLNA Service on or off.

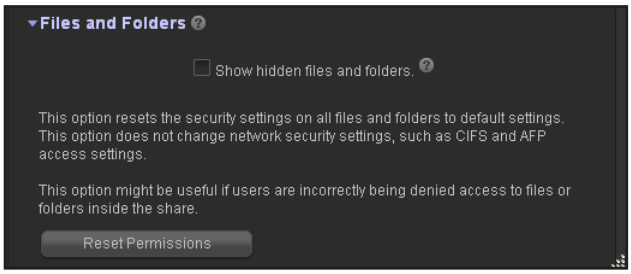
   If you turn on ReadyDLNA, then you can specify the media type in the field provided.

Reset Permissions for Files and Folders

This feature resets the security settings on all files and folders to their default settings. It does not change network security settings. This option might be useful if users are incorrectly being denied access to files or folders inside the share.

➢ **To change the file and folder permissions:**

1. Select **Configuration > Shares**.
2. Scroll down and click **Files and Folders** to expand this section.



3. Click the **Reset Permissions** button.

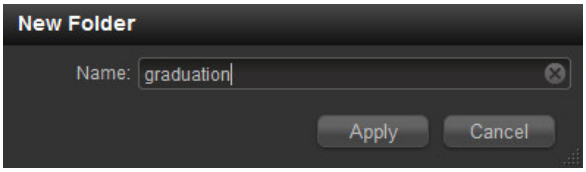
Create a Folder

Use Dashboard to add a folder to a share.

➢ **To create a folder:**

1. Select **Configure > Shares**.
2. Select a share, and right-click to display the drop-down menu.

3. Click the **New Folder** icon.



4. Enter a folder name and click the **Apply** button.

   For more information about file and folder name restrictions, see *File and Folder Names* on page 30.

   The file is added.

Delete a Folder

Use Dashboard to permanently remove a folder from your ReadyNAS system.

WARNING!

Deleting a folder permanently removes the data within that folder.

➢ **To delete a folder:**

1. Select **Configure > Shares**.
2. Select a share, and double-click it to view the folders within the share.
3. Select the folder, and press the **Delete** key on your computer.
4. Highlight the folder that you want to permanently remove and click the **Delete Folder** icon.

   A dialog box displays prompting you to confirm the delete command.

5. Click the **Yes** button.

   The folder and its contents are permanently removed from your ReadyNAS system.

Remove a Share

Use Dashboard to permanently delete a share from your ReadyNAS system.

WARNING!

Removing a share permanently deletes the data within that share.

➢ **To remove a share:**

1. Select **Configure > Shares**.

2. Highlight a share and click the **Remove Share** icon.

   A dialog box displays prompting you to confirm the delete command.

3. Click the **Yes** button.

   The share and its contents are permanently removed from your ReadyNAS system.

Access Shares Remotely

You can remotely access shares on your ReadyNAS system using other network-connected devices like a laptop or tablet. The network-connected device must support either the SMB or the AFP file-sharing protocol.

You can also access shares and automatically synchronize files among network-attached devices using the ReadyDROP feature.

Access Shares Using a Windows Device

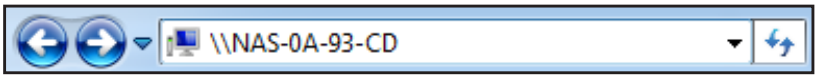
You can access shares on your ReadyNAS system using a network-attached Windows-based device.

➢ **To access a share using a network-attached Windows device:**

1. Ensure that file-sharing protocols are enabled for any share that you want to remotely access.

   For more information, see *Fine-Tune Share Access* on page 34.

2. Enter **\\<hostname>** in the Windows Explore My Computer address bar.



   <hostname> is the name that you assigned to your ReadyNAS system or the default hostname if you did not change it.

   You are prompted to log in to your ReadyNAS system.

3. Enter a user ID and password.

   You can log in with administrator or user credentials. If you log in as a user, the settings configured by the ReadyNAS system administrator for that user limit your access.

   Windows Explorer displays the contents of all available shares on your ReadyNAS system.

Access Shares Using HTTP with Webshare

You can use the Webshare feature to set up HTTP access to your ReadyNAS system.

➢ **To access a share using HTTP:**

1. Ensure that file-sharing protocols are enabled for any share that you want to remotely access.

   For more information, see *Fine-Tune Share Access* on page 34.

2. Open Windows Explorer.
3. Access the share on the ReadyNAS system.
   - If the ReadyNAS system is shown, you can click it.
   - If you do not see the ReadyNAS system, enter its IP address.

Access Shares Using Rsync

You can use Rsync to access any shares that are enabled for the Rsync file-sharing protocol. Instead of browsing shares as you do with some other file-sharing protocols, with Rsync, you copy files from your ReadyNAS system to another computer that supports the Rsync file-sharing protocol. If you previously copied these files, Rsync only copies the differences between the source files and the destination files, making the transfer much quicker than using other file-sharing protocols. The first time you copy files using the Rsync file-sharing protocol, you see no performance difference.

➢ **To access shares using Rsync:**

1. Ensure that the Rsync file-sharing protocol is enabled on your ReadyNAS storage system.

   For more information, see *File-Sharing Protocols* on page 31.

2. On a network-attached device that supports the Rsync file-sharing protocol, launch a terminal program or an Rsync client.
3. Enter any required credentials for the share.

   For more information about Rsync share access credentials, see *Fine-Tune Share Access* on page 34.

For more information about Rsync terminal program commands, see *http://rsync.samba.org*.

For more information about using an Rsync client application, see the documentation that accompanies the application.

Access Shares Using a Mac OS X Device

You can access shares on your ReadyNAS system using a network-attached OS X device.

➢ **To access a share using a network-attached OS X device:**

1. Ensure that file-sharing protocols are enabled for any share that you want to remotely access.

   For more information, see *Fine-Tune Share Access* on page 34.

2. In Finder, select **Go > Connect to Server**.

   The Connect to Server dialog box displays.

3. Connect to your ReadyNAS system as follows:
   - To use the AFP file-sharing protocol, enter the following command in the Server Address field:

     afp://<host_name>

   - To use the SMB file-sharing protocol, enter the following command in the Server Address field**:**

     smb://<host_name>

     In both cases, <host_name> is the name that you assigned to your ReadyNAS system or the default host name if you did not change it.

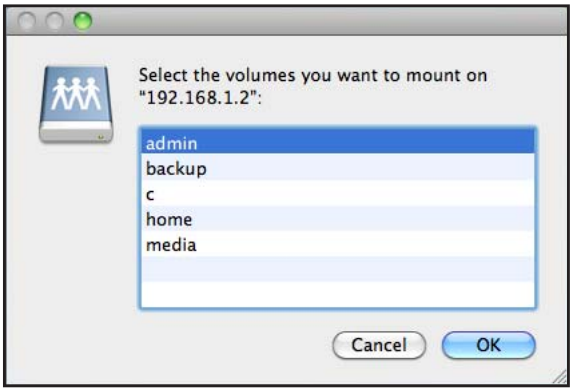
4. Click the **Connect** button.

   You are prompted to log in to your ReadyNAS system.

5. Enter a user ID and password.

   You can log in with administrator or user credentials. If you log in as a user, the settings configured by the ReadyNAS system administrator for that user limit your access.

You are prompted to select a volume. Mac OS X calls your ReadyNAS shares *volumes*.



6. Select a volume or volumes (share or shares) and click the **OK** button.

   Finder displays the volume contents in a window.

Access Shares Using a Linux or Unix Device

You can access shares on your ReadyNAS system using a network-attached Linux or Unix device that supports the SMB file-sharing protocol.

➢ **To access a share using a network-attached Linux or Unix device:**

1. Ensure that file-sharing protocols are enabled for any share that you want to remotely access.

   For more information, see *Fine-Tune Share Access* on page 34.

2. Ensure that your Linux or Unix device supports the SMB file-sharing protocol.
3. Using a terminal program, enter the following command:

   ```
   mount [-t cifs  -o username=<user_name>,password=<password>]
   //<ReadyNAS_IP_Address>/<share_name> <mount_point>
   ```

   Note the following:

   - <user_name> and <password> match your user name and password on the ReadyNAS system. However, to connect as a guest, you do not need to provide a user name. If your operating system requests a password when you access as a guest, press the **Enter** key.
   - <ReadyNAS_IP_address> is the IP address of your ReadyNAS system.
   - <share_name> is the name of the share you want to access.
   - <mount_point> is the name of an empty folder on your Linux or Unix device.

ReadyDROP

ReadyDROP allows you to synchronize files in real time between your ReadyNAS storage system and ReadyDROP-enabled remote devices. Any files that you put in a ReadyDROP folder on your ReadyNAS system or on ReadyDROP-enabled remote devices are synchronized automatically, in the background, as long as the devices have Internet access.

Using ReadyDROP involves these high-level steps:

1. Enable the Remote Access feature (formerly ReadyNAS Remote add-on) and the ReadyDROP feature on your ReadyNAS storage system.
2. Add users to your Access List.
3. Install ReadyNAS Remote (version 1.05 or later on OS X devices and version 1.7.0 or later on Windows devices) and enable ReadyDROP on your remote devices.
4. Add, edit, or delete files in your ReadyDROP folder on your ReadyNAS system or remote device. Changes are synchronized to all of your ReadyDROP folders in the background, in real time.

These steps are explained in more detail in the following sections.

After you follow these steps, your ReadyNAS system and your remote devices have ReadyDROP folders that begin to sync immediately in real time as long as the devices have Internet access. When you add, delete, or edit files in the ReadyDROP folder on your ReadyNAS system, the changes are made in the ReadyDROP folder on all remote devices. When you add, delete, or edit files in the ReadyDROP folder a remote device, the changes are made in the ReadyDROP folder on your ReadyNAS system and any other remote devices.

Enable Remote Access and ReadyDROP

ReadyDROP uses ReadyNAS Remote technology, which was formerly an optional add-on for your ReadyNAS system. ReadyNAS Remote is now a standard part of your system's firmware, and you manage it from the System Settings screen instead of the Installed Add-on screen.

➢ **To enable ReadyDROP:**

1. Select **System > Settings** and scroll down to the Remote Access section.
2. If Remote Access is set to OFF, drag the slider to **ON**.
3. If ReadyDROP is set to OFF, drag the slider to **ON**.
4. Select a volume for the ReadyDROP folder from the Volume drop-down menu.

   A ReadyDROP folder is created on that volume.

Add Remote Access Users

You must add any user that you want to allow to remotely access your ReadyNAS system (including the ReadyDROP folder) to the Access List. When you invite users, they receive an invitation to create a ReadyNAS Remote account if they do not already have one. As the storage administrator, you also need a ReadyNAS Remote account to access your system remotely.

If you had the ReadyNAS Remote add-on installed on your system before upgrading to firmware version 5.3.6 and you had granted users access, those users display in the Remote Access users list.

➢ **To add a Remote Access user:**

1. Select **System > Settings** and scroll down to the Remote access section.
2. Click the **+** icon.

   The Add Remote Access User dialog box displays.
3. Enter the email address of the person to whom you want to grant access and click **Search**.

   If that person has a ReadyNAS Remote account, that person's name is added to the Access List.

   If that person does not have a ReadyNAS Remote account, you are prompted to send an invitation. That person is added to the Access List with an envelope icon. When the new user creates a ReadyNAS Remote account, the envelope icon changes to a person icon.

Install the ReadyNAS Remote Client and Enable ReadyDROP on Remote Devices

These instructions assume that you already have a ReadyNAS Remote account. For more information about creating a ReadyNAS Remote account, see *Add Remote Access Users* on page 42.

➢ **To install ReadyNAS Remote client and enable ReadyDROP on remote devices:**

1. Using the device from which you want to remotely access a ReadyNAS system, visit the ReadyDROP portal at *https://readydrop.netgear.com/*.

2. Download the appropriate client software for your operating system and install it according to your operating system's instructions.

> **Note:** If you previously installed ReadyNAS Remote client software on your system, you must install version 1.05 or later on OS X devices and version 1.7.0 or later on Windows devices version to use the ReadyDROP feature.

The ReadyNAS Remote icon displays in your system tray.

3. Click the ReadyNAS Remote icon and choose **Properties** from the drop-down menu.

   You are prompted to log in to your ReadyNAS Remote account.

4. Enter your ReadyNAS Remote ID and password.

   The ReadyNAS Remote client is installed on your device.

Access Shares Using ReadyNAS Remote

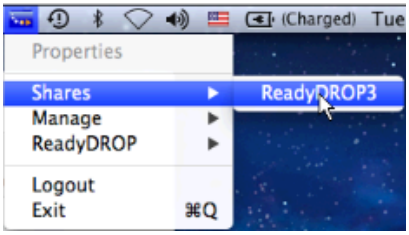
➢ **To access shares using ReadyNAS Remote:**

1. Click the ReadyNAS Remote icon and choose **Login** from the drop-down menu.

   The ReadyNAS Remote icon blinks while the device is connecting and displays as blue when it is connected.

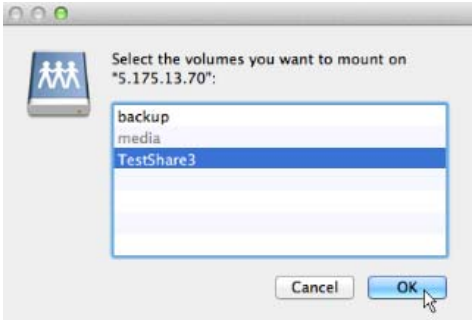
2. Click the ReadyNAS Remote icon and choose **Shares** from the drop-down menu.

   Another drop-down menu lists all the ReadyNAS Remote devices to which you have access.



3. Select the ReadyNAS Remote device that you want to access from the drop-down menu.

   A list of shares displays.



4. Select the share you want to access and click **OK**.

Manage Files Using the ReadyDROP Portal

The ReadyDROP portal is web-based management interface for all of your synchronized ReadyDROP files.

WARNING!

If you add, create, or rename a file with the same name as an existing file, your browser cannot warn you of the overwrite risk. The existing file is immediately overwritten.

➢ **To manage files using the ReadyDROP portal:**

1. Visit the ReadyDROP portal at *https://readydrop.netgear.com/*.

   You are prompted to enter your ReadyNAS Remote account credentials.

2. Enter your ReadyNAS Remote user name and password and click the **Log in** button.

   The ReadyDROP portal displays.

3. (Optional) To create a folder, follow these steps:

   a. Click the **+** icon.

      The New Folder dialog box displays.

   b. Enter a folder name and click the **Create** button.

4. (Optional) To copy a folder from your computer, drag a file to the portal window and drop it.

> **Note:** Your browser must support drag-and-drop capability.

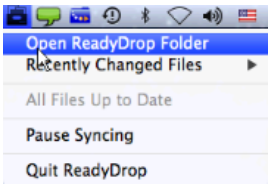
5. (Optional) To browse for files, follow these steps:
   a. Click the browse icon .
      The Upload file dialog box displays.
   b. Click the **Browse** button and navigate to the file you want to upload.
      The file is added to the ReadyDROP folder.
6. (Optional) To delete a folder, follow these steps:
   a. Right-click a folder icon and select **Delete** from the drop-down menu.
      A pop-up window displays asking you to confirm the delete command.
   b. Click the **Yes** button.
      The file is deleted.

Manage ReadyDROP Files from a ReadyDROP-Enabled Device

You can use your ReadyDROP-enabled device's native interface to manage ReadyDROP files.

➢ **To manage ReadyDROP files from a ReadyDROP-enabled device:**

1. Click the ReadyNAS Remote icon and choose **Login** from the drop-down menu.
   The ReadyNAS Remote icon blinks while the device is connecting and displays as blue when it is connected.
2. Click the ReadyNAS Remote icon and select **ReadyDrop** from the drop-down menu.
   The ReadyDROP icon is added to your device's system tray.
3. Click the ReadyDROP icon and select **Open ReadyDrop Folder** from the drop-down menu.



An Explorer (Windows) or Finder (OS X) window that lists the items in your ReadyDROP folder displays.

4. Use your remote device operating system's standard interface to add, delete, or edit files in the ReadyDROP folder.

   Changes are synchronized with your ReadyNAS system and all other ReadyDROP-enabled devices.

4 Users and Groups

This chapter describes how to create and manage user and group accounts. It contains the following sections:

- *Basic User and Group Concepts*
- *User and Group Account Limitations*
- *User and Group Management Modes*
- *Local Users Mode*

Basic User and Group Concepts

Users are the people to whom you grant access to your storage system. If your company uses Windows Active Directory, you can use that to manage ReadyNAS users. Otherwise, when you want to allow someone to access your ReadyNAS system, you create a user account for that person. The ReadyNAS storage system administrator sets up user accounts and decides which shares each user is permitted to access.

If your ReadyNAS storage system is used at home, you might create a user account for each member of the family, but allow only the parents to access financial data stored on your system. You might decide that all user accounts can access photos and music stored on the system. You can set the appropriate permissions for each user.

The ReadyNAS system administrator can set up groups to make it easier to manage large numbers of users. For example, if your ReadyNAS storage system is being used in a business, you might decide that every employee should have a user account. However, you might decide that only users in the accounting department can access information in the accounting share, but that all users can access data stored in the company benefits share. You can create a group for each department and place all users in the appropriate group or groups.

User and Group Account Limitations

You can create up to 32,000 user accounts on your ReadyNAS storage system. However, creating many accounts on your system can degrade its performance, so NETGEAR recommends that you create and maintain only those accounts you need, preferably fewer than 100.

When you add user, a private home share is created for that user. This private home share is visible only to the user and the system administrator.

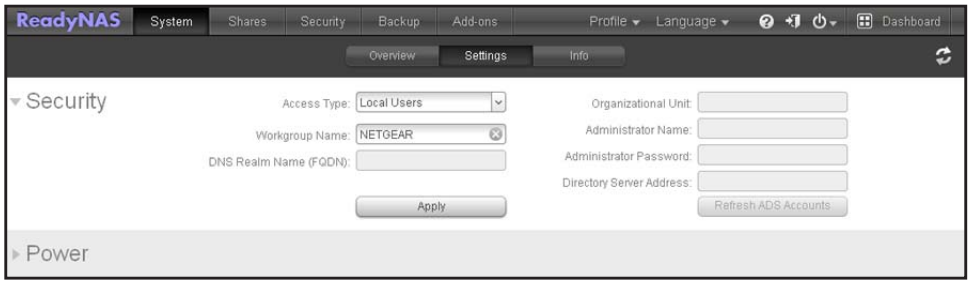
User and Group Management Modes

Your ReadyNAS system offers to methods for managing user and group accounts:

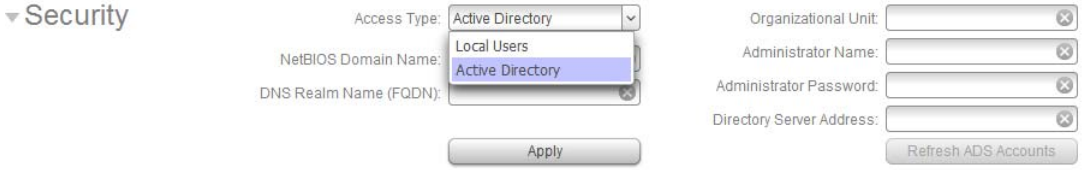
- **Local Users mode**. This is the default mode, which allows you to manually manage user and group accounts.
- **Active Directory mode**. This mode requires an Active Directory database.

➢ **To change user and group management modes:**

1. Select **Configure > System**.
2. Click the **Settings** button:



3. Expand the **Security** section.



4. From the Access Type drop-down menu, select a user and group management mode, and do one of the following:
   - If you select Local Users mode, click the **Apply** button.

     For more information about managing users and groups in Local Users mode, see *Local Users Mode* on page 51.
   - If you select Active Directory mode, enter the details for your Active Directory database in the remaining fields and click the **Apply** button.

     Keep the following precautions in mind:

     - Your Active Directory server and your ReadyNAS system must have the same time set on their system clocks. NETGEAR recommends that you choose your domain controller as your NTP server to ensure that time settings are the same.
     - The DNS server that you use must be able to resolve the host name of the domain controller. NETGEAR recommends that you point your ReadyNAS to the Active Directory DNS to ensure that host names can be resolved.

     If you use Active Directory mode, you do not use your ReadyNAS system to manage your users and groups. Instead, you manage them with your Active Directory database and the changes are transferred to your ReadyNAS system every 12 hours.

     After you make changes to your Active Directory database, click the **Refresh ADS Accounts** button to immediately update user and group information on your ReadyNAS system.

     For more information about managing users and groups with Active Directory, see your Active Directory documentation.

Local Users Mode

Use Local Users mode to manually create, manage, and delete user accounts and groups on your ReadyNAS storage system.

This section assumes that your ReadyNAS system is currently in Local Users mode. For more information about changing user and group management modes, see *User and Group Management Modes* on page 49.

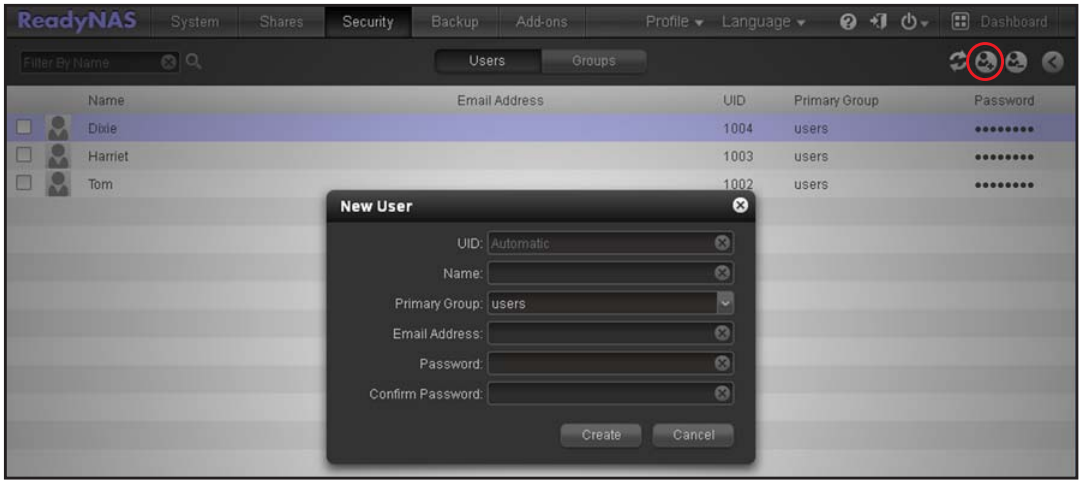
Create User Accounts

Use Dashboard to create a user account.

➢ **To create a user account:**

1. Select **Configure > Security**.

2. Click the arrow to display the icons on the right, and then click the **New User** icon.



3. Enter the following information for the new user:
   - **UID**. Required. The UID is a unique user ID number assigned to each user. By default, the ID number is automatically set, but you can manually enter a number if you prefer.
   - **Name**. Required. User names can have a maximum of 31 characters in most non-Asian languages. If you use Asian language characters, the limit is lower. You can use most alpha, numeric, and punctuation characters for a user name.
   - **Email Address**. Optional.
   - **Password**. Required. Enter a password. Each user password can have a maximum of 255 characters.
   - **Confirm Password**. Required. Reenter the user password.
4. Click the **Add User** button.

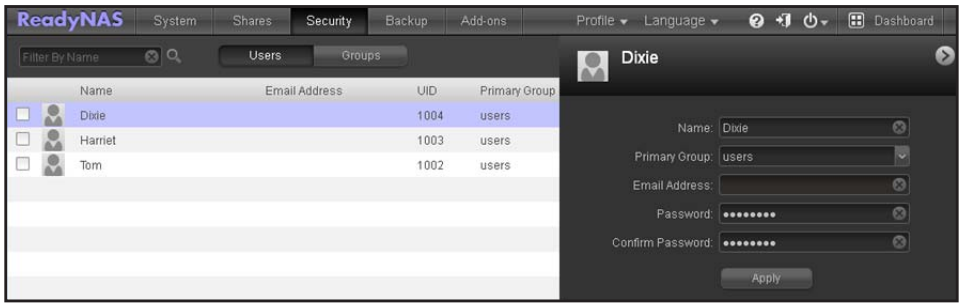
   A new user account is created.

Edit User Accounts

Use Dashboard to edit a user's name, email address, or password.

➢ **To edit a user account:**

1. Select **Configure > Security**.



   If your system has only a few users, they all display on the screen.

   If your system has many users, use the search field to find the user account you want to edit.

2. In the left pane, highlight the user account that you want to edit.

   The right pane displays the settings for that account.

3. Edit the settings for the user as needed.

   You can edit the user's name, primary group assignment, email address, and password.

4. Click the **Apply** button.

   Your changes are saved.

Delete User Accounts

Use Dashboard to delete user accounts. Files on your ReadyNAS system that are owned by the deleted user might become inaccessible. When you delete a user, your ReadyNAS system deletes that user's private home share and its contents.

➢ **To delete a user:**

1. Select **Configure > Security**.

   If your system has only a few users, they all display on the screen.

   If your system has many users, use the search field to find a specific user account.

2. In the left pane, highlight the user account that you want to delete.

   The right pane displays the settings for that account.

3. Click the **right arrow** to display the icons on the upper-right corner and click the **Delete** icon.

   A dialog box displays prompting you to confirm the delete command.

4. Click the **Yes** button.

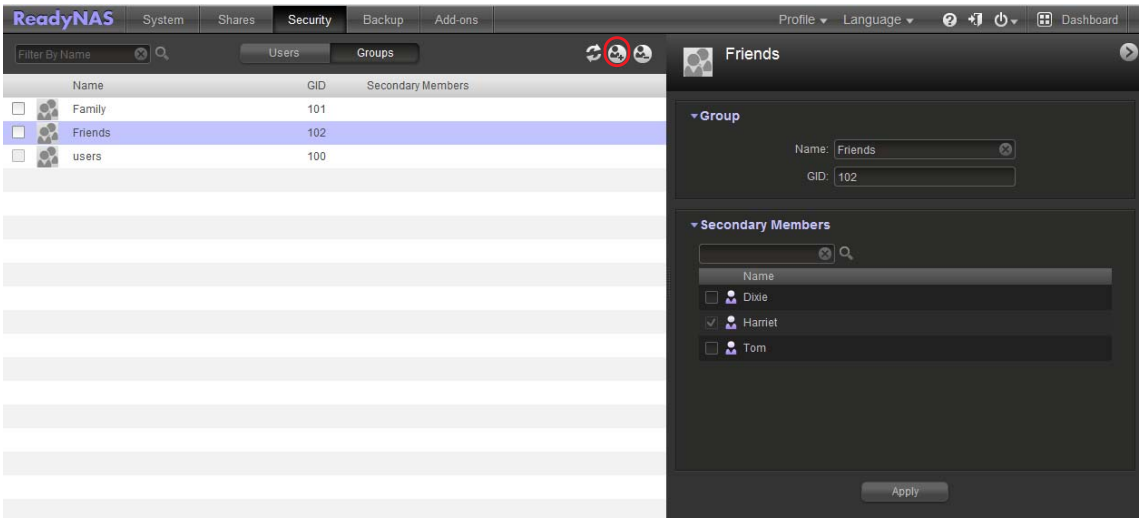
   The user is deleted.

Create Groups

Use Dashboard to create a group.

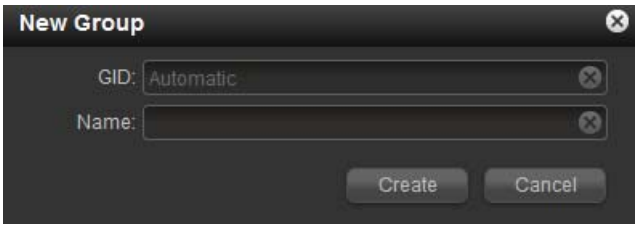
➢ **To create a group:**

1. Click **Configure > Security > Groups** and click the **New Group** button.



The New Groups dialog box displays.

2. Enter a name in the Name field and click the **Create** button.



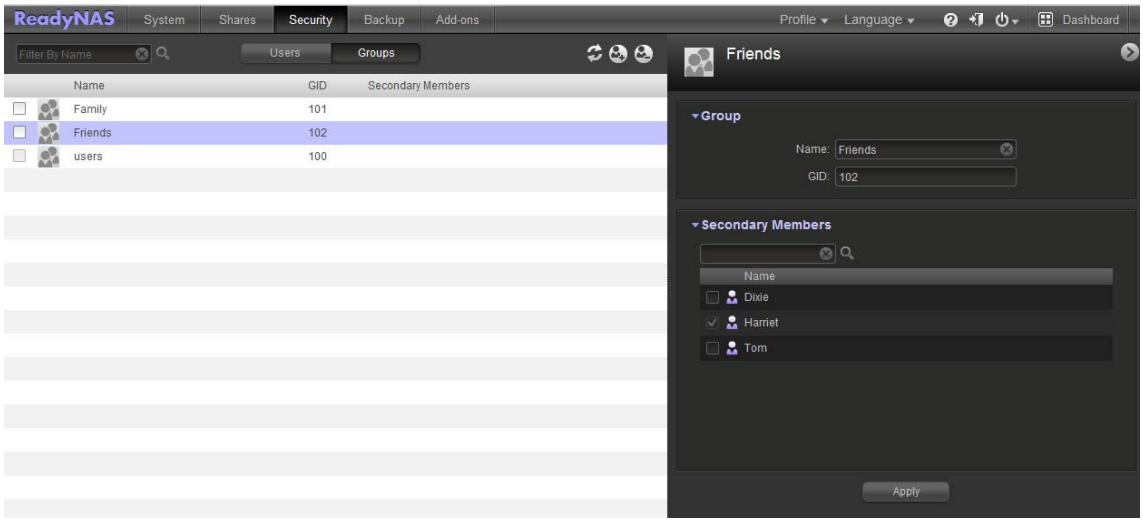
The group is added to your system.

Edit Groups

Use Dashboard to edit a group.

➢ **To edit a group:**

1. Click **Configure > Security > Groups** and highlight the group that you want to edit.



   The right pane populates with information about this group. The Secondary Members section includes a list of all users on your ReadyNAS system. Use these guidelines to determine a user's group membership status:

   - If the check box next to a user is selected and is active (that is, it can be cleared), that user is a secondary member of the group.
   - If the check box next to a user is selected and is dimmed (that is, it cannot be cleared), that user is a primary member of the group.
   - If the check box next to a user is clear, that user is not a primary or secondary member of the group.

2. (Optional) To change the group name, enter a new name in the **Name** field.
3. (Optional) To add a user to this group as secondary member, select the check box next to the user's name.

   To change a user's primary group membership, follow the steps in *Edit User Accounts* on page 52.

4. (Optional) To remove a user as a secondary member of this group, clear the check box next to the user's name.

   You cannot remove primary members from a group using this screen. To move a primary member of this group to another group, follow the steps in *Edit User Accounts* on page 52.

5. Click the **Apply** button.

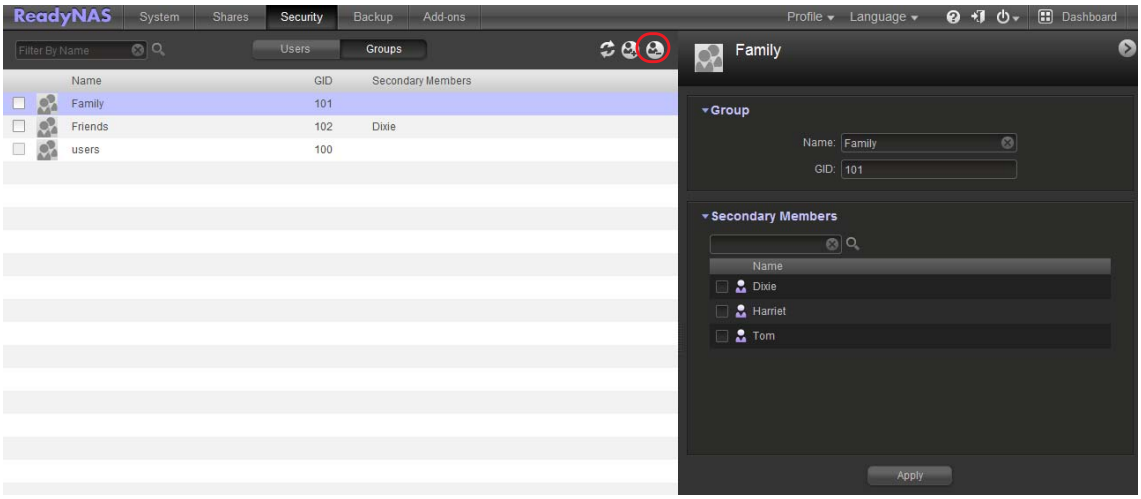
   Your changes are saved.

Delete Groups

Use Dashboard to delete a group. To be eligible for deletion, a group cannot contain any primary members. For more information about moving users to a different group, see *Edit User Accounts* on page 52. For more information about deleting users, see *Delete User Accounts* on page 53.

➢ **To delete a group:**

1. Click **Configure > Security > Groups**.
2. Highlight the group you want to delete and click the **Delete Group** button.



You are asked to confirm the group deletion command.

3. Click the **Yes** button.

The group is deleted from your ReadyNAS system.

5. System Management

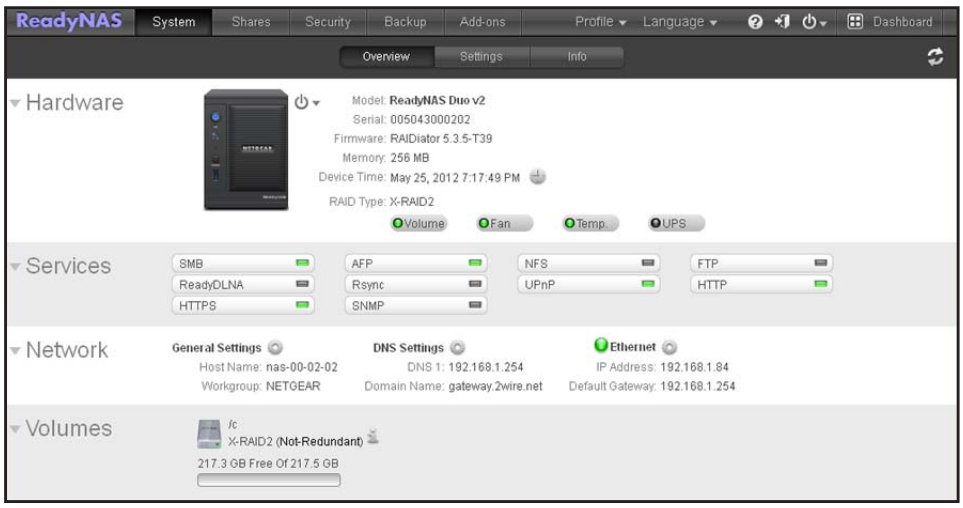
This chapter describes how to manage your ReadyNAS storage system's configuration, network settings, add-ons, and USB storage devices. It contains the following sections:

- *System Overview*
- *Power*
- *Update Firmware*
- *Monitor*
- *Network Settings*
- *Add-ons*
- *NETGEAR genie*

Note: For information about backing up the system configuration, see *Back Up or Restore System Configuration* on page 80.

System Overview

Use Dashboard to manage the configuration of your ReadyNAS storage system. When you click the **System** tab, the Overview screen displays:



You can click to expand each section in this screen.

Set the Clock

To enable your ReadyNAS system to time-stamp your files correctly, ensure that your ReadyNAS system time and date settings are accurate.

➢ **To set system time and date:**

1. Click the **Configure** button and in the Hardware section, click the **clock** icon.

The Date and Time Settings dialog box displays.

2. From the Time Zone drop-down menu, select the correct time zone for your location.

   So that your files are correctly time-stamped, NETGEAR recommends choosing the time zone where your ReadyNAS storage system is physically located.

3. Select the correct time by doing one of the following:
   - Select the **Synchronize clock with an Internet server** check box. When you select this check box, the time drop-down menus dim and your system date and time are synchronized with a NETGEAR NTP server.
   - Clear the **Synchronize clock with an Internet server** check box and use the time drop-down menus and calendar to set the time and date manually.
4. Click the **Apply** button.

   Your settings are saved.

Manage File-Sharing Protocols and Services

You can use Dashboard to enable file-sharing protocols for your entire ReadyNAS system. 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. Disable the file-sharing protocols that you do not use to maximize system memory and improve system performance.

➢ **To enable or disable file-sharing protocols for your entire system:**

1. Select **Configure** and scroll down to the Services section.

The Services section indicates which file-sharing protocols are enabled and which are disabled for your entire ReadyNAS system. A green LED icon indicates that the protocol is enabled. A gray LED icon indicates that the protocol is disabled.

2. Click a button to toggle a file-sharing protocol between enabled and disabled.

   A pop-up menu displays that lists the settings specific to that file-sharing protocol.

3. Edit the settings as needed and click the **Apply** button.

For descriptions of the file-sharing protocols, see *File-Sharing Protocols* on page 31.

For information about specifying protocols for specific shares, see *Fine-Tune Share Access* on page 34.

UPnP Discovery Service

Discovery services are protocols that allow network-enabled devices like computers or your ReadyNAS storage system to discover each other across networks. Your ReadyNAS storage system supports these discovery service protocols:

UPnP (Universal Plug-n-Play). Allows UPnP-enabled clients to discover your ReadyNAS system on your LAN. By default, UPnP is enabled, as shown by the green indicator in the Services section on the Overview screen.

➢ **To turn UPnP off and on:**

Click the **UPnP** button.

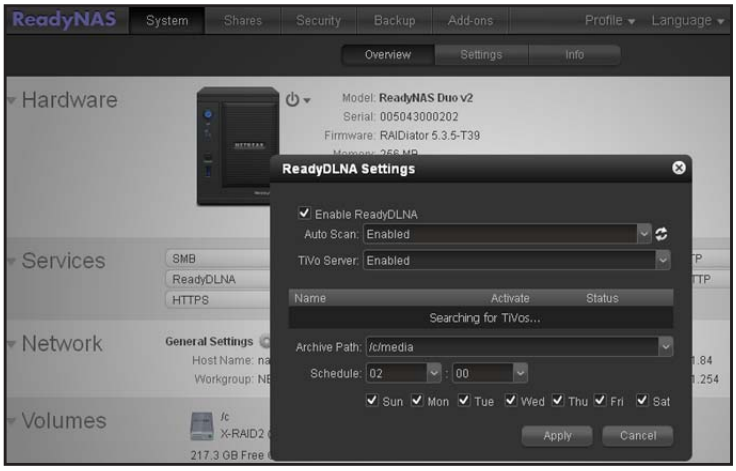
Other discovery services are available as add-ons. For more information about finding, installing, and managing add-ons for your ReadyNAS storage system, see *Add-ons* on page 75.

Set Up TiVo

You set up TiVo through the ReadyDLNA Service button on the System Overview screen.

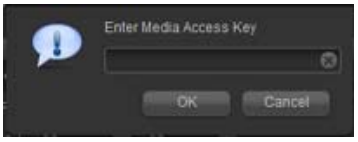
➢ **To set up TiVo:**

1. On the Overview screen, in the Services section, click the **ReadyDLNA** button.



When TiVo devices are detected on your LAN, they show as a list in the ReadyDLNA Settings.

2. When prompted, enter the Media Access Key provided by your TiVo box:



3. Select the **Activate** check box and click **Apply**.

After you activate the TiVo box, you can set the archive path and schedule.

Power

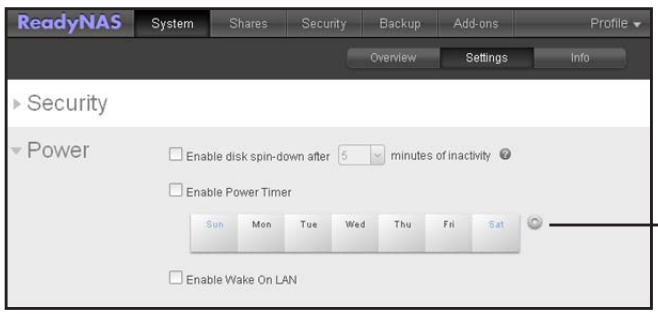
You can use the Dashboard to turn the ReadyNAS system off and on. You can also enable power saving features on the System Settings screen.

Disk Spin-Down and Power Timer

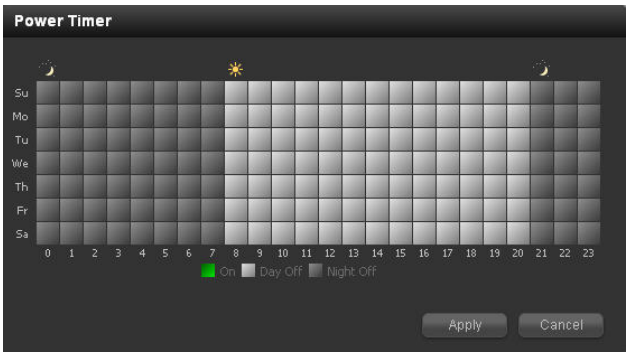
You can configure your ReadyNAS system to power itself on and off and to spin-down the disk according to a schedule. If you schedule this device to power off, during that time, data transfers will be interrupted and pending backup jobs cannot run.

➢ **To set up the power-saving features:**

1. Select **Configure > System > Settings**, and click the **Power** section to expand it.



2. Select the check boxes for the features that you want to use:
   - **Enable disk spin-down**. Allow the hard disk drive to spin-down when inactive, based on the number of minutes you specify.
   - **Enable Power Timer**. Schedule when the ReadyNAS system is on and off.
   - **Enable Wake On LAN**. This setting allows you to turn on the ReadyNAS system over the LAN.
3. If you selected the Enable Power Timer check box, click the configure icon.



4. Click a box to switch between On and Day Off or Night Off.
5. Click the **Apply** button.

   Your settings are saved. The Power screen refreshes showing a high-level view of your Power Timer schedule.

Manually Shut Down the System

Use Dashboard to gracefully shut down your ReadyNAS storage system. When you reboot your system, you must close the Dashboard browser window and use RAIDar to reconnect to Dashboard.

➢ **To gracefully shut down your system:**

1. Click the **Power** icon in the upper-right corner of the Dashboard screen.

2. Choose an option:
   - **Shut Down**. Choose this option to gracefully power down your system.
   - **Restart**. Choose this option to gracefully power down your system and restart it.

   A dialog box displays asking you to confirm your shut down or restart command.
3. (Optional) Select the **Perform volume scan on next boot** check box.

   You do not need to select this option unless you suspect data integrity problems. This scan can take more than an hour depending on your disk capacity and content.

4. Click the **Yes** button.

   Your system shuts down, and if you selected the reboot option, restarts.

5. Close the Dashboard browser window.
6. When you reboot, use RAIDar to reconnect to your ReadyNAS system.

   For more information, see *RAIDar* on page 8.

UPS

Connecting your ReadyNAS storage system to an uninterruptible power supply (UPS) device is an easy way to protect against data loss due to power failures.

If you set up email notifications, your ReadyNAS system sends you an email alert message if the UPS status changes. For example, if a power failure forces the UPS into battery mode, or when the battery is low, you receive an email message. When the battery is low, your ReadyNAS system automatically shuts down safely.

➢ **To connect your ReadyNAS system to a UPS:**

1. Connect the ReadyNAS power cable to the UPS.
2. Connect the UPS USB monitoring cable to a USB port on your ReadyNAS system.

   Dashboard detects compatible UPS devices automatically and displays information about the UPS on the status bar that displays at the bottom of the Configure screens.

   For a list of compatible UPS devices, see the hardware compatibility list at *http://www.readynas.com/?page_id=92*.

3. (Optional) Hover your cursor over the **UPS LED** icon to display more details.

Update Firmware

Firmware is the software that operates your ReadyNAS storage system. It is written directly to your system's read-only memory. NETGEAR periodically releases firmware updates to improve your storage system. Because firmware is stored in read-only memory, updating the firmware requires a special process.

The firmware on your ReadyNAS system is called RAIDiator, and your system uses the 5.3 version of RAIDiator. Updates are numbered chronologically, for example:

- RAIDiator 5.3.1
- RAIDiator 5.3.2

You can update the firmware on your ReadyNAS system remotely from the NETGEAR website or manually from a local drive. The update process changes only the firmware; it does not modify your data.

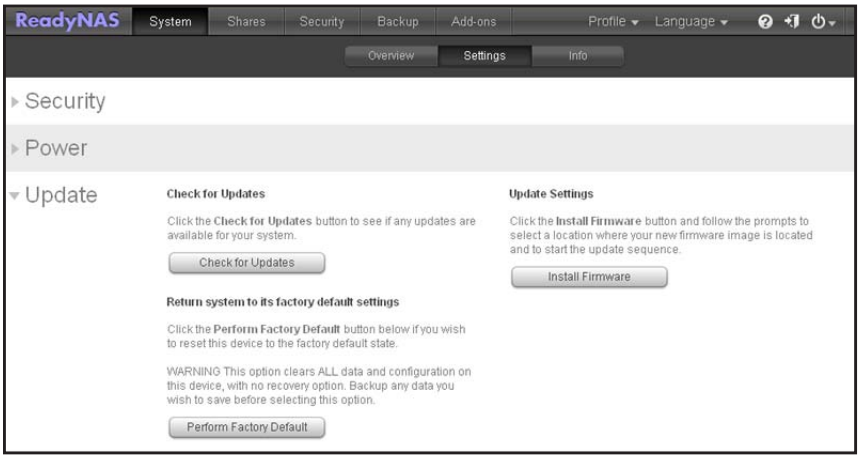
NETGEAR recommends that you back up your data, especially data that cannot be replaced, before you perform a firmware update.

Update Firmware Remotely

If your ReadyNAS system has Internet access, the remote method is easiest.

➢ **To update firmware remotely:**

1. Select **Configure > System > Settings**, and click **Update** to expand that section.



2. Click the **Check for Updates** button.

   If no firmware update is available, you are notified that your system has the most current firmware.

   If a firmware update is available, you are prompted to update your system.

3. If a firmware update is available, click the **Perform System Update** button.

   A pop-up window displays notifying you that the firmware update is under way. After the update finishes, you are prompted to reboot the system.

4. Reboot your system.

   If you enabled email alerts, your ReadyNAS system sends a message when the firmware update finishes.

Update Firmware Locally

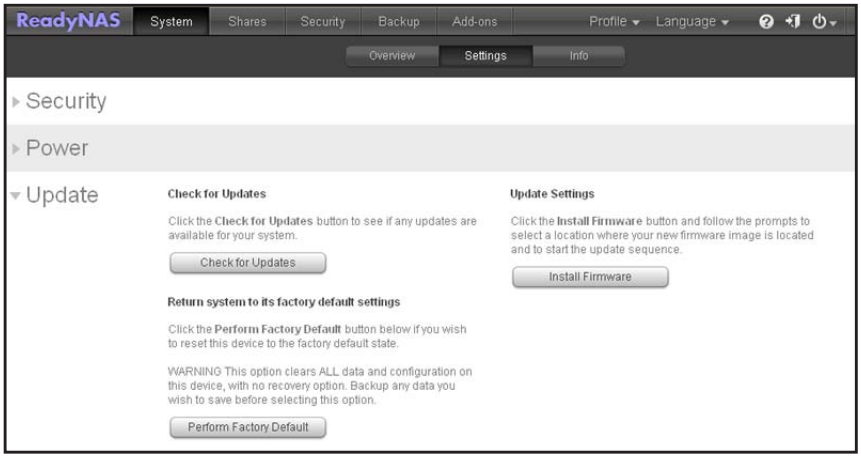
If you keep your ReadyNAS system in a location that does not have Internet access, for example, at a remote vacation cabin, you must update your firmware locally.

➢ **To update firmware locally:**

1. Using a computer that has Internet access, download the latest firmware for your system from *http://readynas.com/downloads* to a USB drive.
2. Connect the USB drive containing the updated firmware file to your ReadyNAS system.

For more information about the USB ports on your ReadyNAS system, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*.

3. Select **Configure > System > Settings** and click **Update** to expand that section.



4. Click the **Install Firmware** button.

   The Update Firmware dialog box displays prompting you to navigate to the firmware file.

5. Click the **Browse** button.

   An operating system-specific dialog box displays allowing you to find the file containing the updated firmware.

6. Navigate to the file containing the updated firmware and select it.

   For most operating systems, you highlight the file and click an **Open** button.

   The operating system-specific dialog box closes and the Update Firmware dialog box refreshes with the name of the file entered in the File Name field.

7. Click the **Upload** button.

   The firmware file uploads to your ReadyNAS system. After a few moments, the Update Firmware dialog box refreshes with details about the new firmware.

8. Click the **Install** button.

   You are prompted to reboot your ReadyNAS system to complete the firmware installation.

9. Reboot your ReadyNAS system.

   If you enabled email alerts, your ReadyNAS system sends a message when the firmware update finishes.

Network Settings

The acronym *NAS* in ReadyNAS is short for *network-attached storage*. Your local area network (LAN) is an integral part of managing and using your ReadyNAS storage system. Connecting your ReadyNAS storage system to the Internet expands your ability to access data stored on your ReadyNAS system when you are away from it. Connecting your system to the Internet also allows you to share data with people located around the world.

A typical network setup that includes a ReadyNAS system resembles the following illustration.

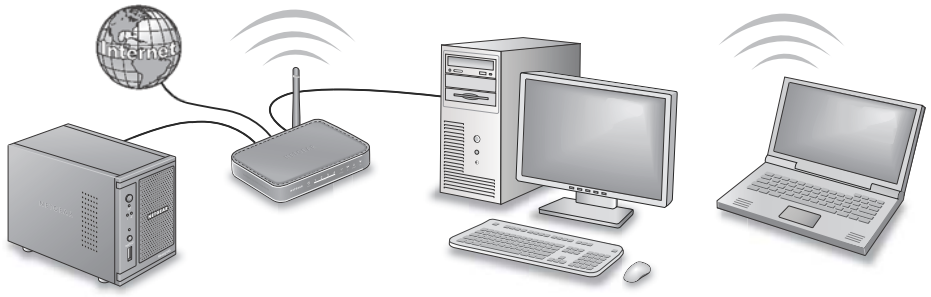


Figure 6. Typical network setup including a ReadyNAS storage system

You can use Dashboard to adjust your ReadyNAS system's network settings.

Ethernet

Your ReadyNAS storage system uses Ethernet technology to transfer information within your local area network. Every device that uses Ethernet technology has a unique MAC (Media Access Control) address that is used to identify the source device and the destination device. MAC addresses are assigned when a device is manufactured. Your ReadyNAS storage system's MAC address is listed on a sticker on the bottom of the system. It is also listed in the Dashboard interface on the Ethernet Settings dialog box, and in RAIDar.

IP (Internet Protocol) addresses are another key component for sharing data over a network. A unique IP address is assigned to every network-connected device. IP addresses can be assigned automatically or manually.

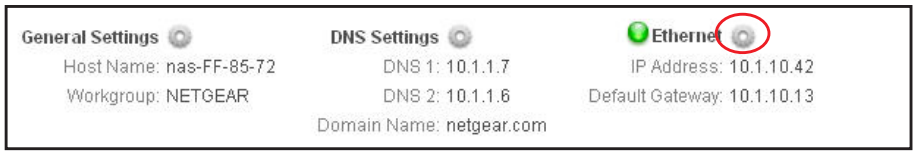
If your network has a DHCP (Dynamic Host Control Protocol) server, you can have an IP address assigned automatically. Most networks have a DHCP server. In most cases, the DHCP server belongs to an Internet service provider (ISP), but a router or other device can also act as a DHCP server.

If you assign an IP address manually, you need to know how to assign an IP address that is valid in your LAN, the subnet mask for your network, and IP address of your gateway.

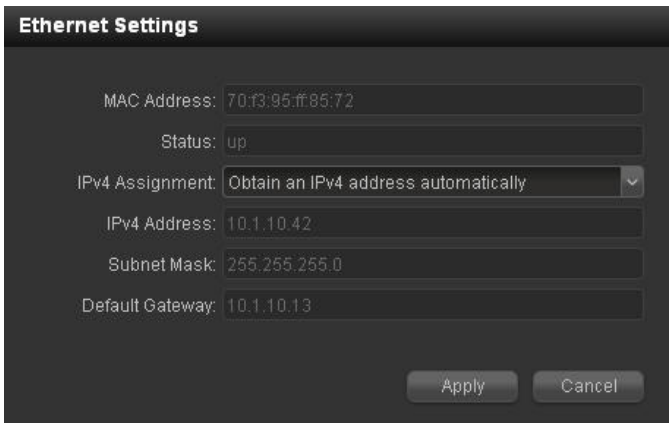
In most environments, your ReadyNAS storage system's default network settings allow you to connect and communicate with your ReadyNAS storage system over your local area network and the Internet. However, you can adjust these settings to accommodate your needs.

➢ **To configure Ethernet settings:**

1. Select **Configure,** scroll down to the Network section and click the Ethernet **configure** icon.



The Ethernet Settings dialog box displays.



2. (Optional) Select an iPv4 assignment method:
   - **Obtain an IPv4 address automatically**. In most networks, a DHCP server is enabled, so you can select this option to automatically set the IP address and network mask.

     If you select the **Obtain an IPv4 address automatically** check box, NETGEAR recommends that you set the lease time on the DHCP server or router to a value of at least one day. Otherwise, you might notice that the IP address of the system changes even after being turned off for only a few minutes. Most DHCP servers allow you to map a static IP address to a MAC address. If you have this option, enabling it ensures that your ReadyNAS system maintains the same IP address, even in DHCP mode.

   - **Use the following IPv4 address**. Take care to enter the IP address correctly. If you enter an incorrect IP address, you cannot connect to your ReadyNAS system. To recover from an incorrectly entered IP address, you must perform an OS reinstall reboot. For more information, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual.*

     If you select the **Use the following IPv4 address** check box, the IPv4 Address, Subnet Mask, and Default gateway fields become active. You must provide the following information when you choose to enter an IP address manually:

a. In the IPv4 Address field, enter an IP address for your ReadyNAS system that is valid in your local area network.

   For more information, see the documentation that accompanies your router or your network administrator.

b. In the Subnet Mask field, enter the subnet mask of your network.

c. In the Default gateway field, enter the IP address of your gateway device.

In addition, if you enter an IP address manually, you must provide DNS server information if you want to access your ReadyNAS system over the Internet. For more information, see *DNS* on page 68.

If the IP address changes, your browser loses its connection to your ReadyNAS storage system. To reconnect to your ReadyNAS system, launch the RAIDar utility, click the **Rescan** button to locate the device, and click the **Setup** button to reconnect.

3. Click the **Apply** button.

   Your settings are saved.

DNS

DNS is short for Domain Name System. Because IP addresses are a string of numbers, they are hard to remember. It is easier to remember a name (for example, www.readynas.com) than a string of numbers when you want to visit a website. A DNS server translates IP addresses into website names and website names into IP addresses.

You can specify up to three DNS servers in your ReadyNAS storage system.

If you selected the option to assign an IP address automatically when you configured your Ethernet settings, the Domain Name Server fields are populated with the DNS settings from your DHCP server and cannot be edited.

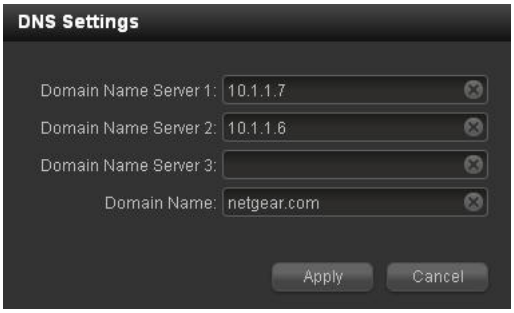
If you selected the option to assign an IP address manually when you configured your Ethernet settings, you must manually specify the IP addresses of the DNS servers and the domain name to access your ReadyNAS system over the Internet. Your network administrator can help you determine your Domain Name Server IP address.

For more information about configuring your Ethernet settings, see *Ethernet* on page 66.

➢ **To configure DNS settings manually:**

1. Select **Configure,** scroll down to the Network section and click the DNS Settings **configure** icon.

The DNS Settings dialog box displays.



2. In at least one Domain Name Server field, enter a DNS server IP address.
3. (Optional) In the Domain name field, enter a domain name.
4. Click the **Apply** button.

   Your settings are saved.

Host Name and Workgroup

Your ReadyNAS storage system uses the host name to advertise itself on your network. When you review your network using RAIDar, your computer or any other interface, you can recognize your storage system by its host name.

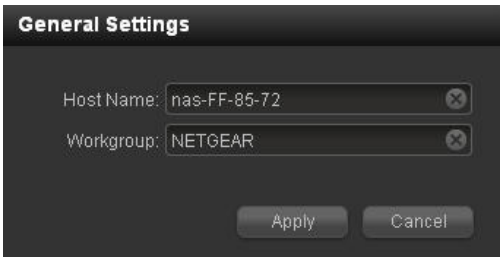
The default host name is *nas-* followed by the last 3 bytes of the system's primary MAC address. You can change the hostname to one that is easier to remember and recognize.

A workgroup is a set of computers on a LAN. Assigning devices to a workgroup can make it easier to manage multiple network-attached devices. If you do not specify a workgroup, the default workgroup NETGEAR is used.

➢ **To change the host name or workgroup:**

1. Select **Configure > System > Overview**.

2. In the Network section, click the General Settings configure icon.



3. (Optional) Enter a new host name in the Host Name field.

   The host name must be unique on your LAN. For example, if your router's host name is Fido, you cannot use Fido as your ReadyNAS system's host name. Use only alphanumeric characters and hyphens in your host name.

   The host name you choose can have a maximum of 24 characters in most non-Asian languages. If you use Asian language characters, the limit is lower. Your host name can consist of the following characters:

   - Letters
   - Numbers
   - Hyphen (-)
   - Comma (,)
   - Period (.)
   - Underscore (_)

   The first character must be a letter.

4. (Optional) Enter a new workgroup name in the Workgroup field.

   The host name you choose can have a maximum of 15 characters in most non-Asian languages. If you use Asian language characters, the limit is lower. You can use most alpha, numeric, and punctuation characters for a share name.

5. Click the **Apply** button.

   Your settings are saved.

USB Storage Devices

You can connect USB disk and flash drives to your ReadyNAS system. USB disk and flash drives that you connect to your ReadyNAS system must use the FAT32 or NTFS file system.

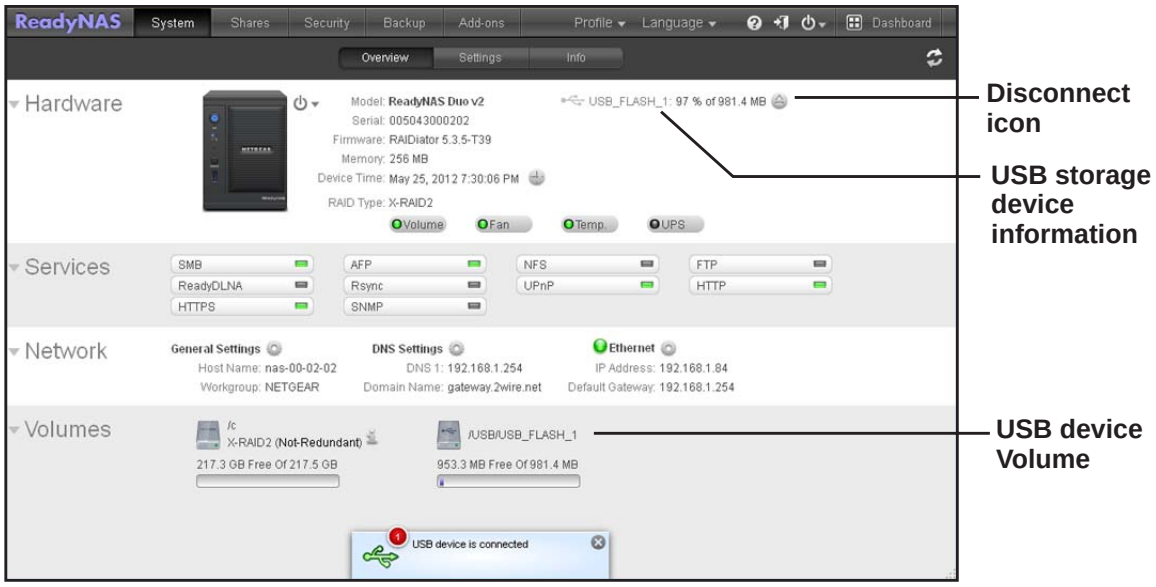
➢ **To connect a USB storage device:**

1. Connect a USB storage device to one of the USB ports on your ReadyNAS storage system.

   For more information about the USB ports on your storage system, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*.

2. (Optional) Select **Configure > System**.

   The Hardware section of the screen shows information about the USB storage device.



   The connected USB device is shown in the Volumes section of the screen.

3. (Optional) To safely unmount the USB storage device, click the **Disconnect** icon.

Monitor

Use Dashboard to monitor the status of your ReadyNAS storage system.

System Information

The Dashboard home screen provides a snapshot of your system status. More detailed information is available on the Info screen.

➢ **To view system status:**

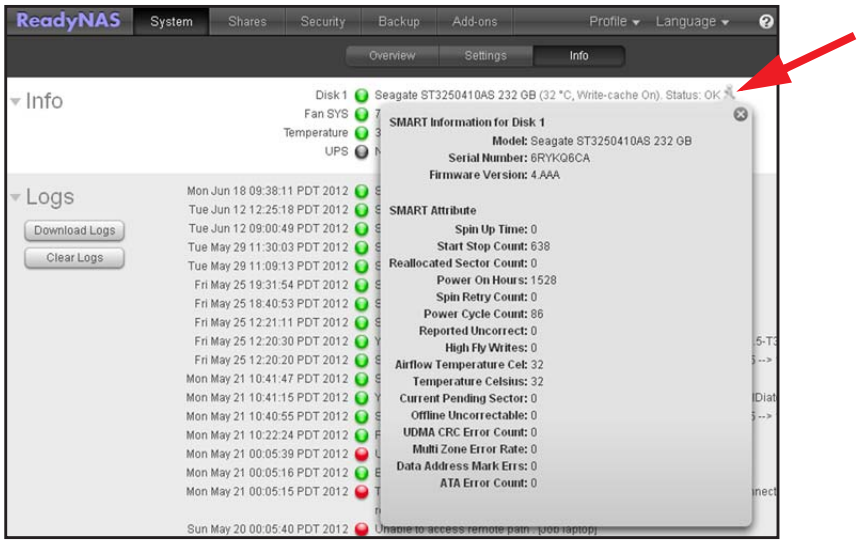
Select **Configure > Info**.

Check the Disk Status with Disk Smart

This feature allows you to monitor the health of the hard disk.

➢ **To use Disk Smart:**

1. Select **Configure > Info**.
2. Mouse over the **i** to display information about the hard disk.



Alerts

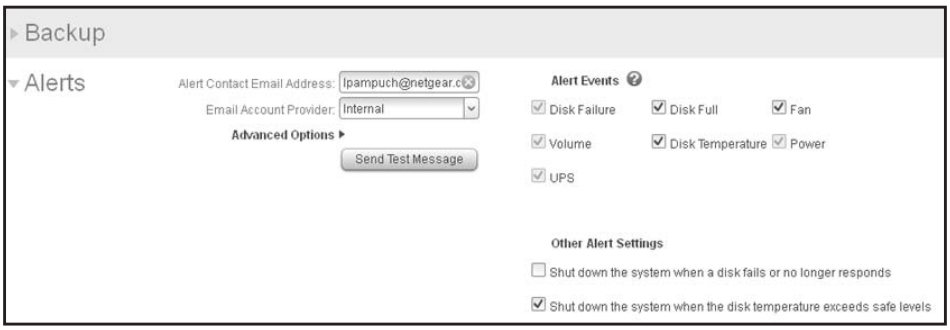
System events such as a fan failure, a hard disk failure, a quota violation, or low disk space generate email alert messages, if you provide an email address for alert notices. Your storage system divides system events into two categories, mandatory and optional. Mandatory events always generate email alert messages. You can control which optional system events generate email alert messages.

Email Alert Contacts

To receive an email message alerting you if a system event that requires your attention occurs, provide an email address for alert messages. You can use an email address that is accessible from a smartphone to help you monitor your ReadyNAS system when you are away from it.

➢ **To manage alert email contacts:**

1. Select **Configure > System**. Click the Settings tab next to the Overview tab, and then click **Alerts** to expand that section.



2. In the Alert Contact Email Address field, enter an email address.

   You can also edit an existing alert contact or delete it by clearing the field.

3. From the Email Account Provider drop-down menu, select your email service provider.

   If you select the internal email service provider option, your ReadyNAS system acts as a mail transfer agent (MTA). This setting works well in many corporate environments.

4. (Optional) If your email service provider is not listed, expand the Advanced Options section and customize the outgoing mail server (STMP) settings for your provider.
5. (Optional) Enter the details for your email service provider.

   This information is often available on the Internet, or you can contact your email service provider for the information.

6. (Optional) To determine if you configured the contact information correctly, click the **Send Test Message** button.

   If you do not receive the test message, change the settings. For example, if you selected Internal as your email provider and the test message is not delivered, select Custom instead and configure the advanced options.

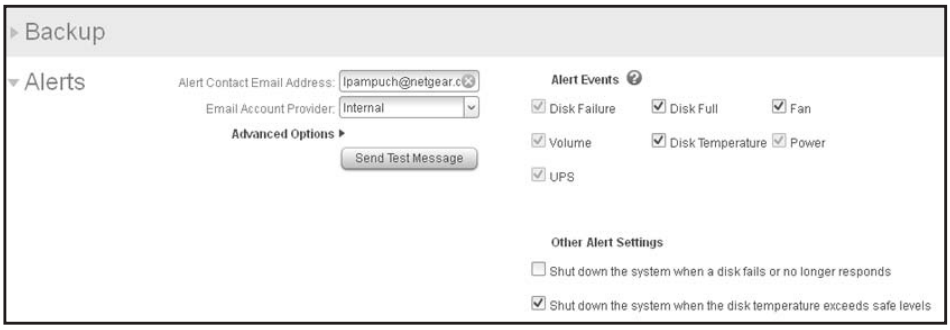
7. Click the **Apply** button.

Alert Event Settings

Your ReadyNAS storage system is preconfigured to generate email alert messages when mandatory and optional system events occur. You can determine which optional system events generate alerts. NETGEAR recommends that you keep all alerts enabled; however, if you are aware of a problem, you might disable an alert temporarily.

➢ **To manage alert event settings:**

1. Select **Configure > System > Settings** and expand the Alerts section.



2. Select or clear any event check boxes.

   You can clear any non-dimmed events. Dimmed events always trigger email alerts.

3. Select or clear any check boxes in the Other Alert Settings section, as follows:
   - Select the **Shut down the system when a disk fails or no longer responds** check box to power off your ReadyNAS system if a disk fails.
   - Select the **Shut down the system when disk temperature exceeds safe level** check box to power off your ReadyNAS system if the disk temperature exceeds the normal range.
4. Click the **Apply** button.

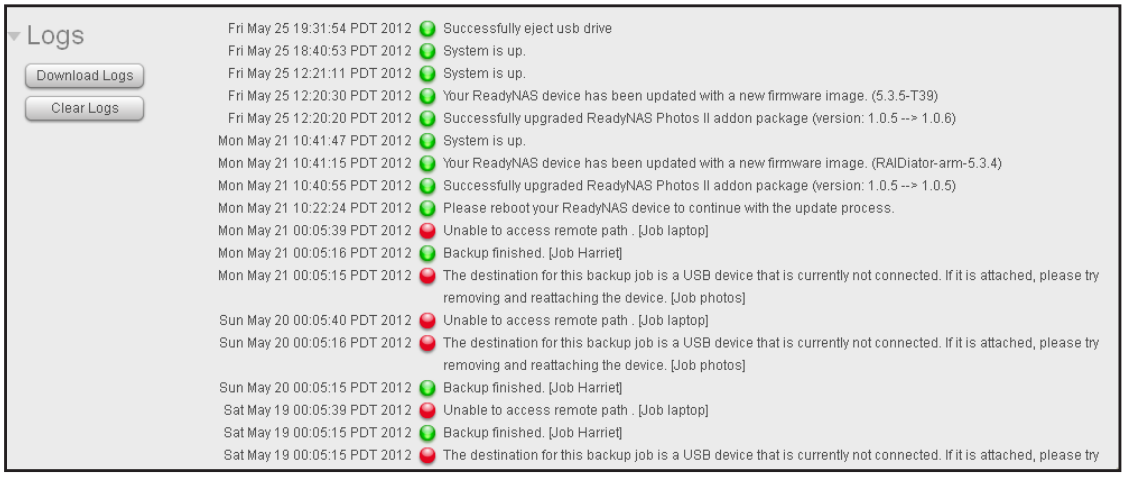
System Logs

System logs provide information about the status of various system management tasks, including a time stamp. Only advanced users should use system logs to diagnose or troubleshoot system problems. If you call NETGEAR technical support, the representative might ask you to send your system logs.

In addition to system logs, your ReadyNAS storage system also maintains backup logs. For more information, see *View a Backup Log* on page 88.

➢ **To manage system logs:**

1. Select **Configure > Info** and view the Logs section of the screen.



2. (Optional) Click the **Download Logs** button.

   A .zip file of all logs files is downloaded to your browser's default download location.

3. (Optional) Click the **Clear Logs** button.

   The log entries shown on the screen are cleared. Your log files remain intact.

Add-ons

Add-ons are applications for your ReadyNAS storage system. You can add a wide variety of features and services to your ReadyNAS system by installing add-ons from NETGEAR and other developers. Some add-ons appear on the Available Add-ons tab in Dashboard. Other add-ons, called *standalone add-ons* in this manual, are available from *http://readynas.com/addons* and *http://readynas.com/community_addons* and directly from independent developers.

Manage Add-ons

You can use Dashboard to view and manage add-ons that are currently installed on your ReadyNAS storage system.

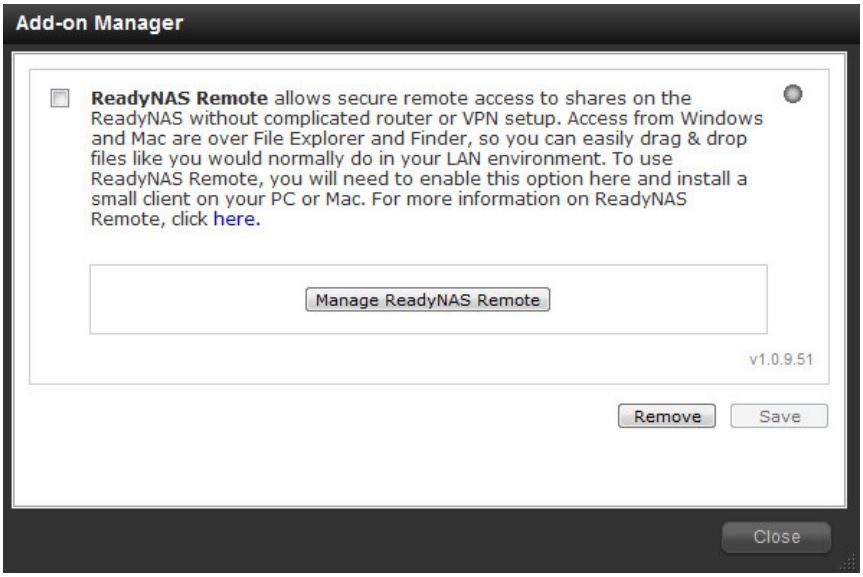
The ReadyNAS Photos II add-on is preinstalled on your ReadyNAS system. ReadyNAS Photos II allows you to share photos directly from your ReadyNAS storage system. With ReadyNAS Photos, you can share your photos without uploading them to a social media or photo-sharing website. With ReadyNAS Photos II, you can host your own personal photo sharing site.

Add-ons that are installed, enabled, and running without errors display a green LED icon in Dashboard.

➢ **To manage installed add-ons:**

1. Select **Configure > Add-ons > Installed**.
2. Click the icon for an add-on.

   The Add-on Manager dialog box displays.



3. (Optional) Use the links and buttons to manage the add-on.

   The buttons and links in the Add-on Manager dialog box vary by add-on.

Find and Install Add-ons Using Dashboard

You can use Dashboard to find and install add-ons.

➢ **To browse for and install available add-ons:**

1. Select **Configure > Add-ons**.

2. Click the **Get** button for the add-on you want to install.

3. Follow the prompts, if any, to install the add-on.

   Some add-ons require you to reboot your ReadyNAS system to complete the installation.

   A dialog box displays when the add-on installation finishes.

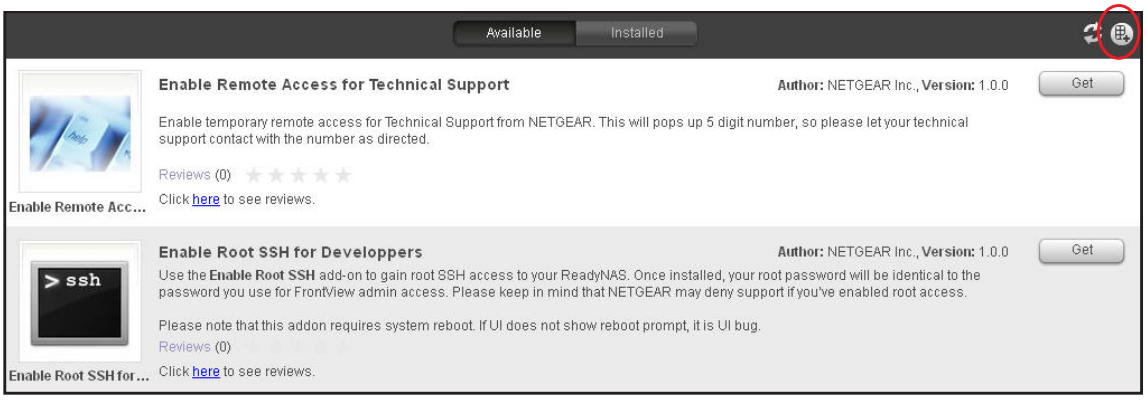
4. Click the **OK** button.

Install Standalone Add-ons

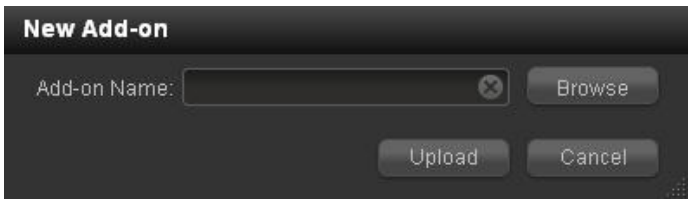
Standalone add-ons are applications for your ReadyNAS system that do not appear on the Available Add-ons tab in Dashboard. You download a standalone add-on directly to a computer that is on the same LAN as your ReadyNAS system and then use Dashboard to install it.

➢ **To install a standalone add-on:**

1. Select **Configure > Add-ons**.



2. Click the **New Add-on** button in the upper-right corner.



3. Click the **Browse** button to navigate to the add-on you want to upload.
4. Click the **Upload** button.
5. Follow the prompts to install the add-on.

   Some add-ons require you to reboot your ReadyNAS system to complete the installation.

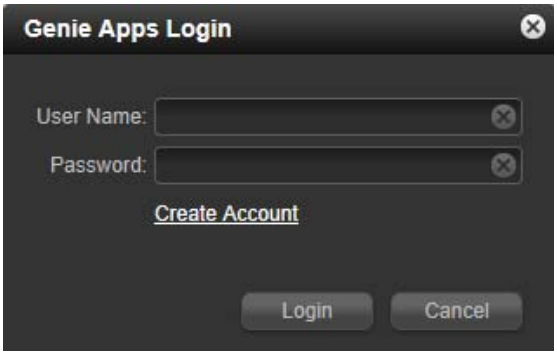
NETGEAR genie

NETGEAR genie is a store that contains applications you can add to your ReadyNAS storage system.

➢ **To access the NETGEAR genie store:**

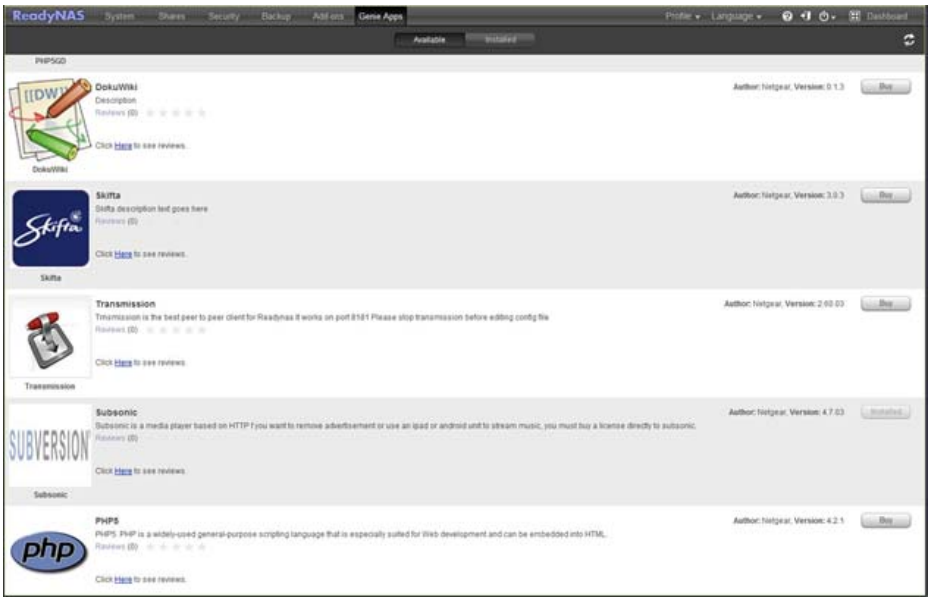
1. Select **Configure > System > Genie Apps**.

   You are prompted to log in to your NETGEAR genie account.



2. If you do not have a ReadyNAS Remote account, click the **Create Account** link and follow the prompts to create one.
3. If you have an account, provide your user name and password and click the **Login** button.

   The NETGEAR genie store displays.



Backup and Recovery

6

If your data is important enough to store, it is important enough to back up. Data can be lost due to a number of events, including natural disaster (for example, fire or flood), theft, improper data deletion, and hard drive failure. By regularly backing up your data, you can recover your data if any of these situations occur.

> **Note:** The ReadyNAS Replicate add-on allows you to replicate data from one ReadyNAS system to another. For more information, visit *www.readynas.com/?p=4853*.

Businesses sometimes use backup data to comply with data retention regulations and to archive information before making major changes to their IT environments, such as batch updates to databases. At home and in business settings, you should back up important data that might be lost due to a natural disaster or the loss of a device that stores data.

This chapter includes the following sections:

- *Back Up or Restore System Configuration*
- *Basic Data Backup Concepts*
- *Back Up Your ReadyNAS System with Vault*
- *Back Up Data onto a Local Device*
- *Time Machine*
- *Manage Backup Jobs*
- *Recover Backed Up Data from ReadyNAS Vault*
- *Recover Backed Up Data from a Network-Attached Device*

Back Up or Restore System Configuration

In addition to backing up data, you can back up and restore your ReadyNAS system's system configuration settings.

➢ **To back up or system configurations:**

1. Select **Configure > System > Settings** and expand the **Backup** section.

2. Select the check boxes for the settings that you want to back up.
3. Click the **Dowload Configuration Archive** button.

➢ **To restore system configuration from a file**

1. Select **Configure > System > Settings** and expand the **Backup** section.
2. Click the **Browse** button to find the file containing your previously backed-up system configuration settings.
3. Click the **Restore** button.

Basic Data Backup Concepts

A *backup* is a copy of data that you use if your primary copy is deleted or damaged. The process of storing primary data on a second device is called *backing up*.

The process of restoring backed-up data to the device where the primary copy is kept is called *recovery*.

A *full backup* makes a copy of all of the data stored on the primary system. Your first backup of a primary system is always a full backup job. The length of time a full backup takes depends on the amount of stored data.

An *incremental backup* copies only the data that has changed since your last backup process. An incremental backup job takes much less time than a full backup job.

Note: RAID configuration of disks is not a substitute for backing up data. RAID configuration protects you only from data loss if a disk fails. For more information about the protection that RAID configuration offers, see *RAID* on page 19.

A *backup source* is the place that data that is being backed up is primarily stored. A *backup destination* is the place where the backed-up data is stored. If you need to recover your data, the backup target becomes the recovery job source.

A *secure cloud backup* lets you use online backup and recovery tools to save data over the Internet to a remote location, and restore the data if needed.

Your ReadyNAS system can manage backup and recovery for many devices on your network, and it also supports the ReadyNAS Vault secure cloud backup.

Back Up Your ReadyNAS System with Vault

With ReadyNAS Vault, your ReadyNAS data can be backed up securely to a remote secure data center. Your data is encrypted before it is sent over the Internet. Backup administration is over a 128-bit SSL connection, the same method that banks and financial institutions use.

The following figure shows how to back up data that is stored on your ReadyNAS system to the cloud, and how to return that data to your ReadyNAS with a restore process.

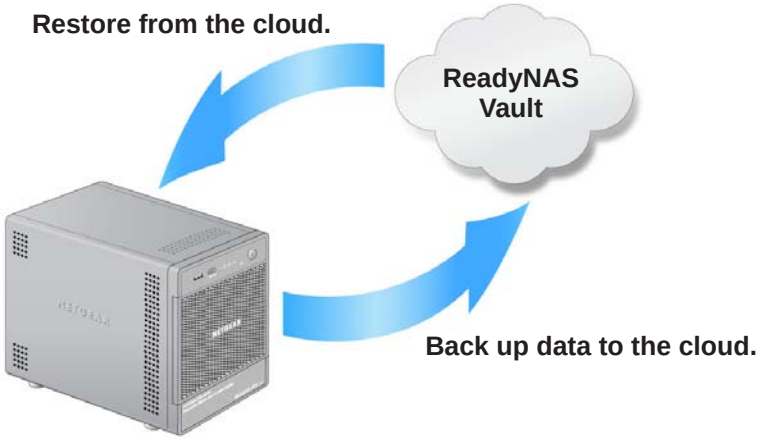
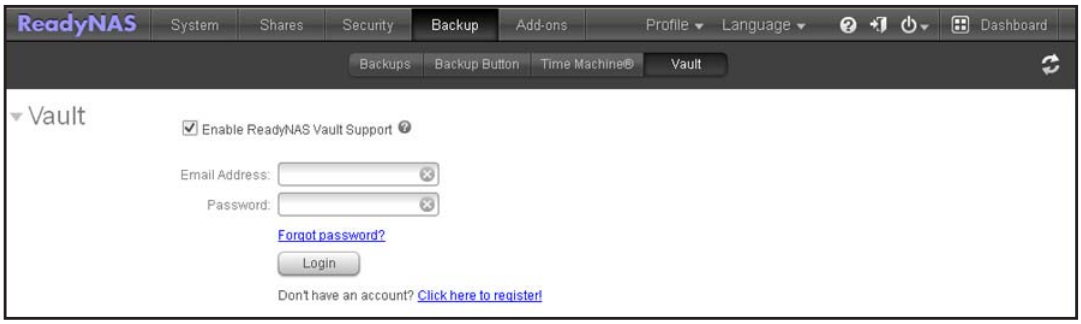


Figure 7. Using a ReadyNAS system to back up and recover data stored on a cloud

➢ **To set up a ReadyNAS Vault backup job:**

1. Select **Configure > Backup > Vault**:



2. If necessary, select the Enable ReadyNAS Vault Support check box.

   By default, the Enable ReadyNAS Vault Support check box is selected.

3. Log in to your ReadyNAS Vault account.

   If you do not have an account yet, use the **Click here to register** link to set it up.

   You can use the same ReadyNAS Vault account for all of your ReadyNAS systems.

4. Click the **Manage ReadyNAS Vault** button to start setting up your backup jobs.

   For instructions about using Vault, see the *www.elephantdrive.com* website, where the cloud backup is managed.

Back Up Data onto a Local Device

You can use Dashboard to create jobs to back up data from computers or devices onto a ReadyNAS system that is on the same network.

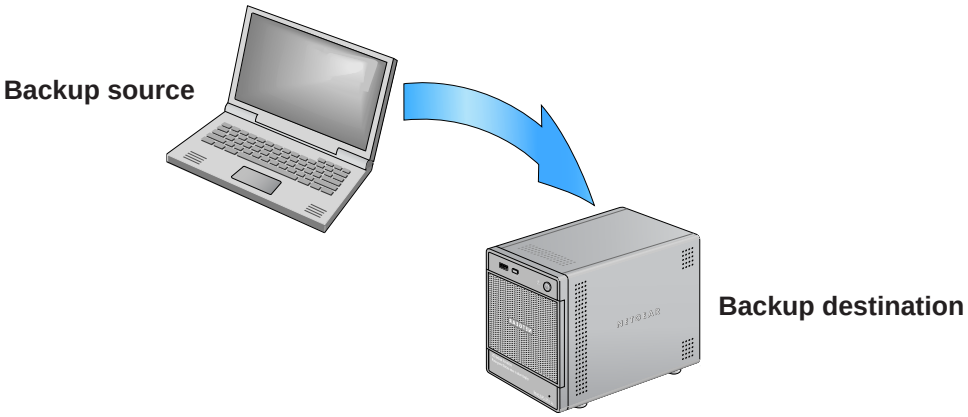


Figure 8. Backing up data from a computer to a ReadyNAS system

You can also back up files from your ReadyNAS system onto a local device as shown in the following figure.

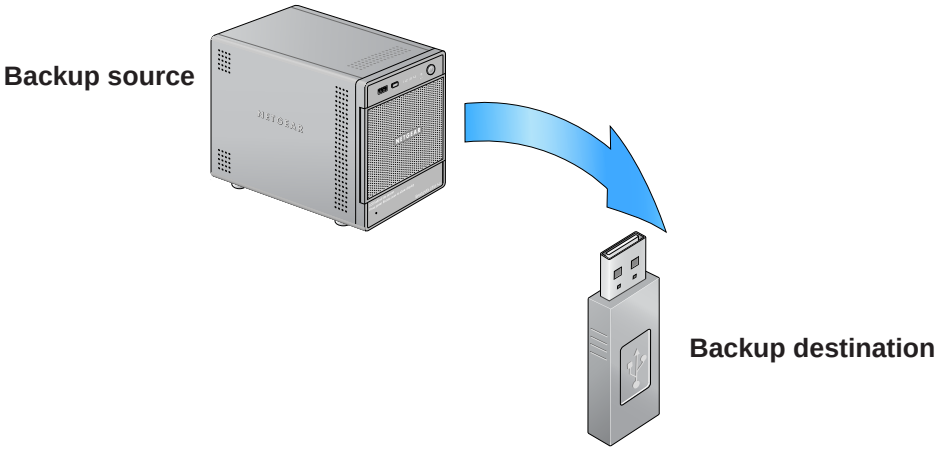


Figure 9. Backing up data from a ReadyNAS system to a USB drive

By default, all backup jobs are scheduled to run every day. You can edit these settings after you create each backup job. For more information, see *Edit a Backup Job* on page 86.

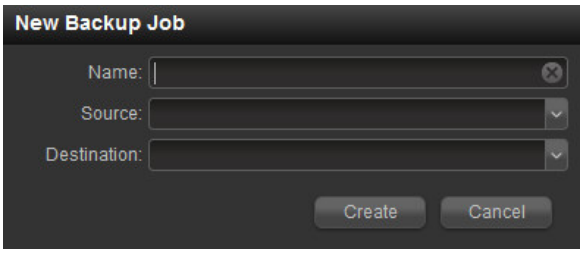
The first few times you back up data, it is a good practice to perform the backup manually. With a manual backup, you can make sure that access is granted to the remote backup source or destination, and determine how long the backup takes to run. You need to know how long the backup job takes so that you can allow enough time in the schedule for it to complete before you schedule the next backup. You can run a manual backup after you create each backup job. For more information, see *Manually Start a Backup Job* on page 87.

Backup and recovery jobs using Time Machine use different procedures. For more information, see *Time Machine* on page 89.

➢ **To back up data onto a network-attached device:**

1. Select **Configure > Backup** and click the **New Backup Job** icon.

The New Backup Job dialog box displays:



2. In the Name field, enter a name for the new backup job.

   The name you choose can have a maximum of 255 characters.

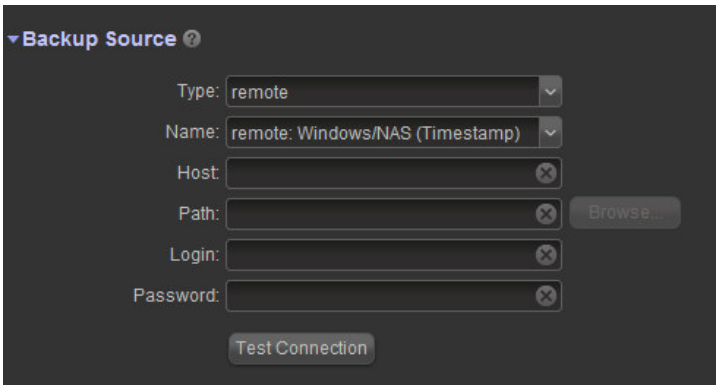
3. In the Source drop-down menu, select the source that has the data that you want to back up.
4. From the Destination drop-down menu, select a backup destination.

   Depending on how your ReadyNAS system is configured, these options vary.

5. Click the **Create** button.

   The job is added to the menu of backup jobs in the left pane.

   If you selected a remote source, complete the fields in the Backup Source section.



6. If necessary, enter the remote host name, the folder path, and any login credentials required to access that path.
   - If you select a backup destination that requires a path, use a forward slash (/) to separate directories, for example:

     /<share name>/<folder name>

   - Do not use a backslash (\) in paths.
   - If you select a USB device that is connected to your ReadyNAS system, you can leave the path blank to put the data at the top level of the USB device's directory.
   - You can enter a folder path to place the backed-up data in a specific folder.

7. (Optional) Click the **Test Connection** button to determine if your ReadyNAS system can access the remote destination.

   In the left pane, the status LED icon for this job changes from gray to red or green to indicate test results. Red indicates connection failure and green indicates connection success.

8. (Optional) In the Backup Schedule section, adjust the new job schedule.

   If you clear the Enabled check box, the job does not run automatically. Instead, you must manually start this backup job. For more information, see *Manually Start a Backup Job* on page 87.

   If you select the Enabled check box, use the drop-down menus and check boxes to set a schedule for when this backup job automatically runs.

9. (Optional) In the Backup Options section, adjust option settings.

   a. From the Schedule full backup drop-down menu, select how frequently you want a full backup to be run.

   b. From the On completion send drop-down menu, select what type of logs to send when the backup job finishes.

      You can send a log that lists only errors during backup, full logs consisting of file listings (can be large), or status and errors (status refers to completion status).

      Log email messages are restricted to approximately 10,000 lines. For more information about viewing full logs, see *View a Backup Log* on page 88.

   c. (Optional) Select the **Remove the contents of the backup destination** check box.

      Selecting this check box erases the destination path contents before the backup is performed, which NETGEAR does not recommend for recovery jobs.

WARNING!

When using this option, ensure that you have correctly identified your backup source and backup destination. If you reverse them, you might permanently delete your source files. NETGEAR recommends that you do not enable this option unless your destination device is very low on storage space.

      Best practice is to experiment with this option using a test share to make sure that you understand how it works.

   d. (Optional) Select the **After backup is complete, change ownership of files in the backup destination** check box.

      Your ReadyNAS system attempts to maintain original file ownership whenever possible. However, you can automatically change the ownership of the backed-up files to match the ownership of the share. This allows anyone who can access the backup share to have full access to the backed-up files.

10. Click the **Apply** button.

Your settings are saved and this job displays in the left pane.

If you cleared the Enable button in *step 8*, you must manually start the job.

If you selected the Enable check box in *step 8*, this backup job will run according to the schedule you established.

Manage Backup Jobs

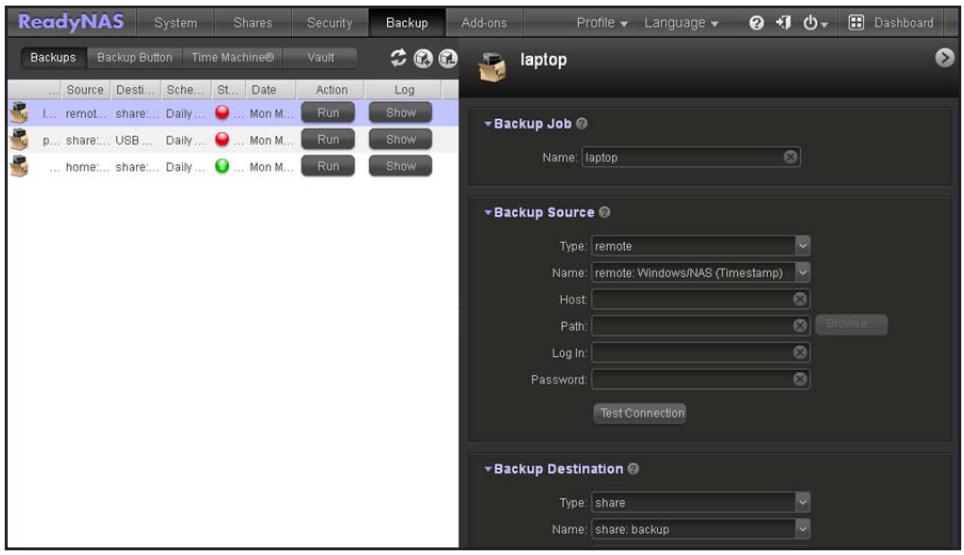
Use Dashboard to manage backup jobs and backup logs and to configure how the Backup button on your system operates.

Edit a Backup Job

Use Dashboard to edit backup jobs that you created earlier.

➢ **To edit a backup job:**

1. Select **Configure > Backup**.



The backup jobs you previously created display in the left pane.

2. Highlight the job you want to edit.

   The right pane populates with details about that backup job.

3. Using the check boxes, drop-down menus, and fields in the right pane, edit the backup job as desired.
4. Scroll to the bottom of the right pane and click the **Apply** button.

   Your changes are saved.

Delete a Backup Job

Deleting a backup job permanently removes it from your ReadyNAS system.

➢ **To delete a backup job:**

1. Select **Configure > Backup**.

   The backup jobs you previously created display in the left pane.

2. Highlight the job you want to delete.
3. Click the **Delete Backup** icon.

   A dialog box displays prompting you to confirm the command.

4. Click the **Yes** button.

   The backup job is deleted.

Manually Start a Backup Job

You can manually start a backup job that you did not put in the automatic scheduling queue when you created it. You can also manually start a job that you put in the automatic scheduling queue but that you want to force to run immediately.

➢ **To start a backup job manually:**

1. Select **Configure > Backup**.

2. Click the **Run** button in the row for the backup job that you want to start manually.

   The backup job starts.

View a Backup Log

You can use Dashboard to view the full logs of completed backup jobs or the partial backup logs of jobs that are in progress.

In addition to backup logs, your ReadyNAS system also maintains system logs. For more information, see *System Logs* on page 67.

➢ **To view backup logs:**

1. Select **Configure > Backup**.

   The backup jobs you previously created display in the left pane.

2. Click the **Show** button in the row for the backup job whose log you want to view.

   A dialog box displays showing the backup log.

3. Click the **Clear** button to clear the backup log or the **Close** button to close the dialog box.

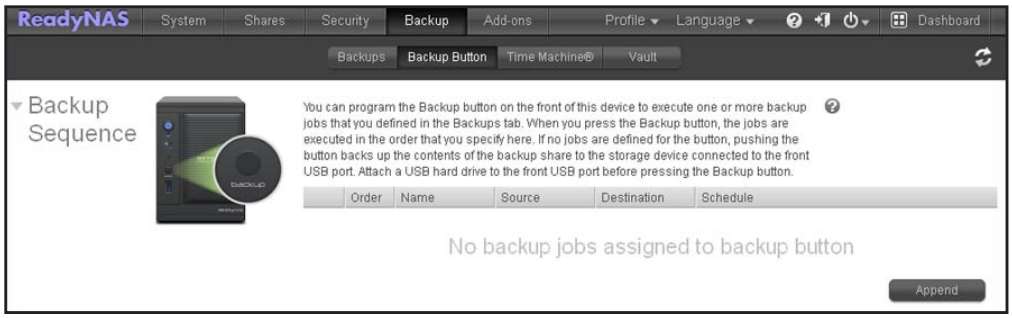
Configure the Backup Button

You can use Dashboard to configure the Backup button on your ReadyNAS storage system to execute one or more backup jobs that you previously created. When you press the Backup button, the jobs are executed in the order that you specified in the backup schedule.

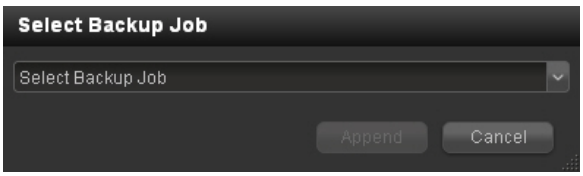
If no jobs are scheduled for the button, pressing the Backup button backs up the content of the backup share to a storage device connected to the front USB port.

➢ **To configure the Backup button:**

1. Select **Configure > Backup > Backup Button**.



2. (Optional) To add a backup job, follow these steps:
   a. Click the **Append** button and follow these steps:



   b. Select a backup job from the drop-down menu and click the **Append** button.

      The Backup Button screen refreshes and the new job is listed.

3. (Optional) To delete a backup job from the Backup button sequence, follow these steps:
   a. Click the **delete** icon.

      A dialog box displays asking you to confirm the command.

   b. Click the **Yes** button.

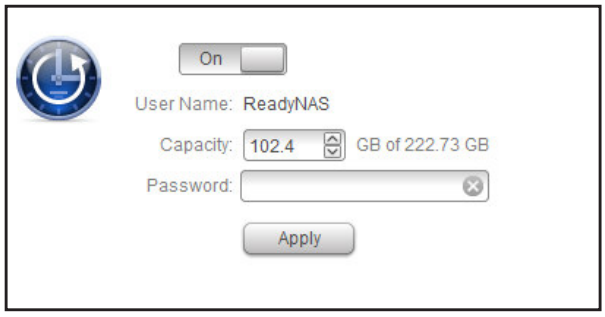
      The backup job is removed from the Backup Sequence section.

Time Machine

You can use your ReadyNAS storage system to back up data stored on your Mac OS X Time Machine.

➢ **To back up data stored on your Time Machine to your ReadyNAS system:**

1. Select **Configure > Backup > Time Machine**.



2. Drag the slider to **On**.
3. In the Capacity field, enter the maximum amount of space on your ReadyNAS storage system that you want to devote to Time Machine backups.

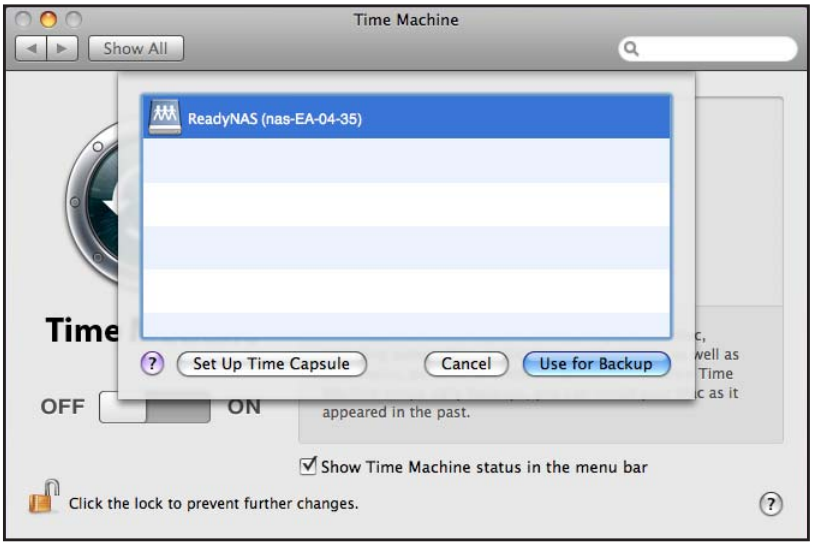
   If Time Machine backups exceed this quota, the ReadyNAS system deletes older versions of Time Machine backups to bring Time Machine backups within this quota.

4. Create a password and enter it in the Password field.
5. Click the **Apply** button.

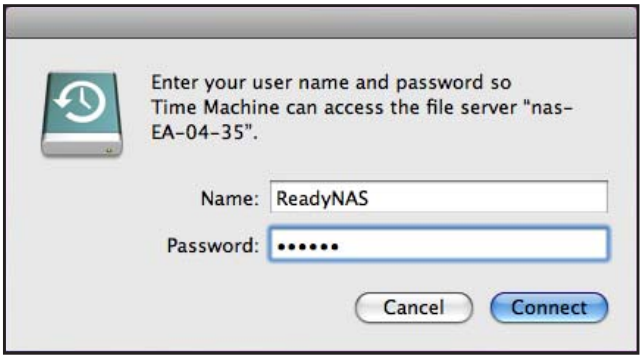
   Your settings are saved.

6. Launch Time Machine and click the **Choose Backup Disk** button.

A pop-window displays that lists available disks, including your ReadyNAS system.



7. Select your ReadyNAS system and click the **Use for Backup** button.



8. In the Name field, enter **ReadyNAS**.
9. In the Password field, enter the password you created in *step 4* and click the **Connect** button.

   Time Machine begins the backup, which can take several minutes to start.

Recover Backed Up Data from ReadyNAS Vault

If you need to retrieve a lost file or folder, click the **Access Your Files** tab and use the built-in explorer to view your ReadyNAS host name under My ReadyNAS. If you have multiple ReadyNAS systems using the same account, they show up as separate entries here.

➢ **To recover backed up data:**

1. Navigate down the tree to where your file or folder that you want to restore is, and right-click on the entry in the pane to your right.
2. Click the **Download** option.

   You are prompted for where you want to save the file or folder locally on your computer.

Recover Backed Up Data from a Network-Attached Device

You can use Dashboard to create jobs to restore data that you backed up. You can restore backed up data that is on the ReadyNAS system onto a device, as shown in the following figure.

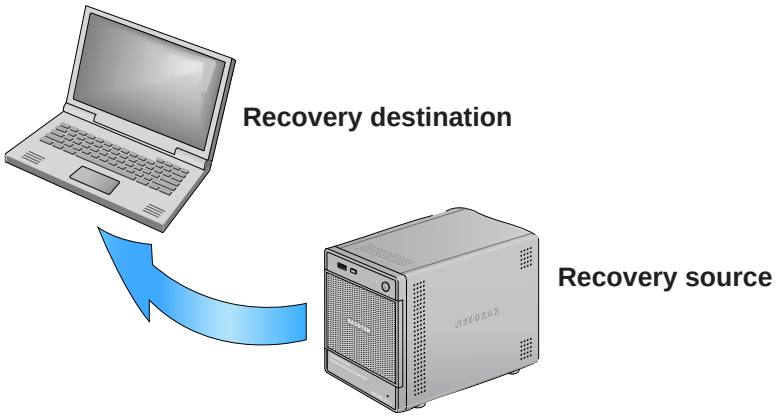


Figure 10. Recovering data from a ReadyNAS system to a laptop computer

You can also use Dashboard to create a backup job to restore data to your ReadyNAS system that you backed up to another network-attached device as shown in the following figure.

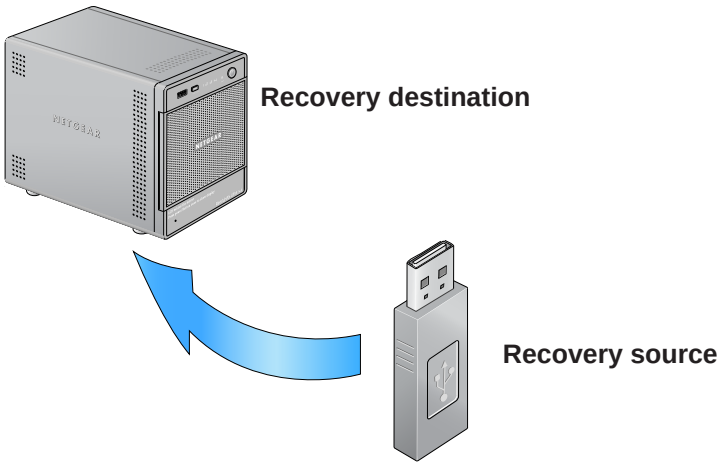


Figure 11. Restoring data from a USB drive to a ReadyNAS system

WARNING!

Although you are performing a recovery procedure, your ReadyNAS system treats it like a backup job. You use Dashboard screens labeled *backup* and you reverse the source and destination systems you used when you backed up the data that you are recovering.

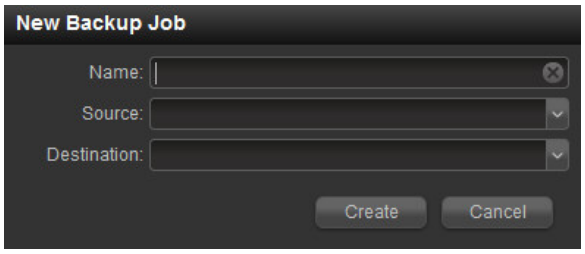
By default, all backup jobs are scheduled to run every day. You can edit these settings after you create each backup job. For more information, see *Edit a Backup Job* on page 86.

Backup and recovery jobs using Time Machine use different procedures. For more information, see *Time Machine* on page 89.

➢ **To recover backup data to a network-attached device:**

1. Select **Configure > Backup** and click the **New Backup Job** icon.

The **New Backup Job** dialog box displays.



2. In the Name field, enter a name for the new recovery job.

   The name you choose can have a maximum of 255 characters.

3. From the Source drop-down menu, select a restore source on your ReadyNAS system.

   Depending on how your ReadyNAS system is configured, these options vary.

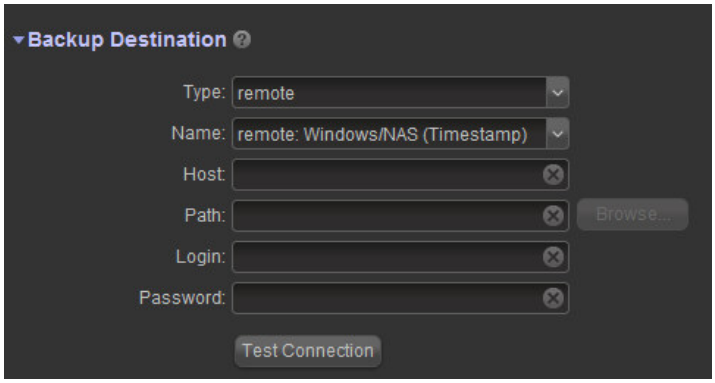
4. From the Destination drop-down menu, select a recovery destination that is not part of your ReadyNAS system.

   Select a USB device that is attached to your ReadyNAS system or a remote device.

5. Click the **Create** button.

   The job is added to the list of backup jobs in the left pane.

6. If you selected a remote recovery destination, complete the fields in the Backup Destination section.



7. If necessary, enter the remote host name, the folder path, and any login credentials required to access that path.
   - If you select a backup destination that requires a path, use a forward slash (/) to separate directories, for example:

     /<share name>/<folder name>

   - Do not use a backslash (\) in paths.
   - If you select a USB device that is connected to your ReadyNAS system, you can leave the path blank to put the data at the top level of the USB device's directory.
   - You can enter a folder path to place the backed-up data in a specific folder.

8. (Optional) Click the **Test Connection** button to determine if your ReadyNAS system can access the remote destination.

   In the left pane, the status LED icon for this job changes from gray to red or green to indicate test results. Red indicates connection failure and green indicates connection success.

9. In the Backup Schedule section, clear the **Enabled** check box.

   Clearing this check box forces the recovery procedure to be started manually, which ensures that the recovery job does not happen automatically.

WARNING!

To ensure the integrity of the data stored on your primary device, never schedule a recovery job to run automatically.

10. (Optional) In the Backup Options section, adjust option settings.
    a. From the Schedule full backup drop-down menu, select **Every Time**.
    b. From the On completion send drop-down menu, select what type of logs to send when the recovery job finishes.

       You can send a log that lists only errors during recovery, full logs consisting of file listings (can be large), or status and errors (status refers to completion status).

       Log email messages are restricted to approximately 10,000 lines. For more information about viewing full logs, see *View a Backup Log* on page 88.

    c. Ensure that the **Remove the contents of the backup destination** check box is clear.

       Selecting this check box erases the destination path contents before the backup is performed, which NETGEAR does not recommend for recovery jobs.

WARNING!

When using this option, ensure that you have correctly identified your backup source and backup destination. If you reverse them, you might permanently delete your source files. NETGEAR recommends not enabling this option unless your destination device is very low on storage space.

Best practice is to experiment with this option using a test share to make sure that you understand how it works.

d. (Optional) Select the **After backup is complete, change ownership of files in the backup destination** check box.

   Your ReadyNAS system attempts to maintain original file ownership whenever possible. However, you can automatically change the ownership of the backed-up files to match the ownership of the share. This allows anyone who can access the backup share to have full access to the backed-up files.

11. Click the **Apply** button.

    Your settings are saved and this recovery job displays in the left pane. Because you cleared the Enable check box, you must manually start the backup job.

12. Highlight this job in the left pane and click the **Run** button.
13. Click the **Go** button for this recovery job.

    The recovery process begins.

Notification of Compliance

A

Regulatory Compliance Information

This section includes user requirements for operating these products 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.

These products' 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

These products do not contain any user serviceable components and are 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 these products 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

These digital apparatus, ReadyNAS Duo v2 and NV+ v2, do 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.

European Union

These products 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

Index

A

Access List 42
access rights 32
Active Directory 49
additional documentation 7
add-ons 75
  available 76
  installed 76
  managing 75
  preinstalled 75
  standalone 77
administrator password
  changing 14
  recovering 15
alerts 73
available add-ons 76

B

backup
  backing up data on a network-attached device 82
  configuring Backup button 88
  deleting job 87
  editing job 86
  starting job manually 87
  Time Machine 89
  versus RAID configuration 80
  viewing logs 88

C

clock 58
compliance 96

D

Dashboard, launching 9
default login credentials 11
default password 11
default user name 11
DHCP 66, 67
discovering your storage system 9
disk configuration
  changing Flex-RAID formats 26
  changing from Flex-RAID to X-RAID2 23
  changing from X-RAID2 to Flex-RAID 25
  expanding volumes 22
  managing 22
diskless systems 7
DNS 68

E

Ethernet 67
expanding volumes, volume expansion 22

F

file names 30
firmware
  updating locally 64
  updating remotely 63
Flex-RAID 21
folders
  creating 35
  deleting 36
  naming 30

G

genie 78

H

hardware manual 7
host name 69
HTTP acessing shares 38

I

initial configuration 11
installed add-ons 75, 76
IP address 66

J

JBOD 21

L

language 13
launching Dashboard 9
life-support mode 9
Linux device share access 40
Local Users 49
logical volumes 19
logs
- backup 88
- system 74

lost administrator password 15

M

MAC address 66
Mac OS X device share access 39
monitor
- system logs 75
- system status 72

N

NETGEAR genie 78
network settings
- DHCP server 67
- Ethernet 67
- host name 69
- workgroup 69

network setup 66

O

OS X device share access 39
overview, system 58

P

password
- changing user password 52
- default 11
- recovering administrator password 15

physical volumes 19
power management 63
power timer 61
product registration 16, 17

Q

quick-start guide 7

R

RAID levels 21
RAIDar
- buttons 9
- discovering your storage system 9
- launching Dashboard 9
- LED icons 8

ReadyDLNA
- TiVO 60

ReadyDROP 41
ReadyDROP portal 43, 44
ReadyNAS community website 7
ReadyNAS Remote 41
recovery
- recovering data to a network-attached device 91

registration 16
Remote Access user 42
remote share access 37

S

setup wizard 11
shares
- access rights 32
- accessing remotely 37
- accessing using HTTP (Webshare) 38
- accessing using Linux device 40
- accessing using Mac OS X device 39
- accessing using Unix device 40
- accessing using Windows device 37
- creating 32
- creating a folder 35
- deleting 36
- deleting a folder 36
- fine-tuning access 34
- viewing 33

shutdown 62
standalone add-ons 77
synchronize files 41
system configuration
- alert email contacts 73
- alert event settings 74
- changing administrator password 14
- clock 58
- language 13
- time and date 58

system logs 75
system overview 58
system shutdown 62
system status 72

T

technical support 2
time and date settings 58
Time Machine 89
TiVO setup 60
trademarks 2
troubleshooting
- DHCP disabled on router 10
- DHCP not working on router 10
- dynamic IP address changes too quickly 67
- incorrect IP address 67
- IP address typo 67
- lost administrator password 15
- RAIDar does not detect ReadyNAS system 10
- reconnecting after losing static IP address 68
- static IP address changed 68
- wrong disk removed 9

U

Unix device share access 40
UPS 63
USB storage devices 71
user accounts
- changing password 52
- creating 49
- deleting 53
- editing 52

V

volume scan 62
volumes 19

W

Webshare 38
Windows device share access 37
workgroup 69