



ReadyNAS for Home RAIDiator 5.3 Software Manual

Models:

Duo v2
NV+ v2

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San Jose, CA 95134
USA

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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 Units*
- *RAIDar*
- *Setup Wizard*
- *Diskless Units*

Quick-Start Guide

This manual provides conceptual information about storage systems, detailed instructions about using your system, and NETGEAR's 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 12. 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 47. You create a user account for each person that you want to allow to access your ReadyNAS system.
5. *Basic Backup Concepts* on page 77. 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 Units

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 unit. 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.

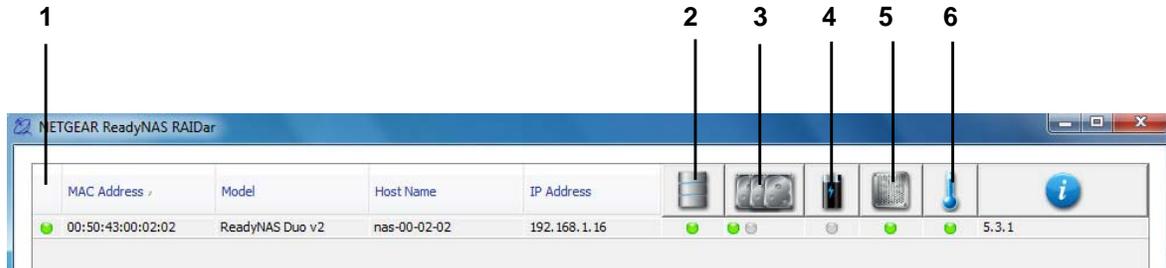


Figure 1. RAIDar icons

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)

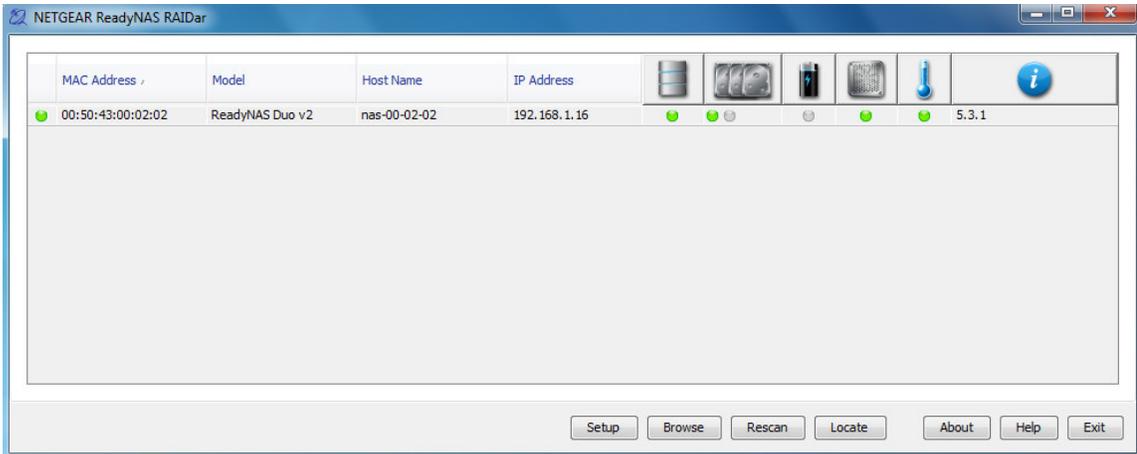
LED icon	Description
	<p>The volume is in life-support mode.</p> <p>Life-support mode happens when the volume encounters multiple disk failures and might be dead. However, the ReadyNAS storage system blocked it from being marked dead in case someone accidentally removed the wrong disk while the system was running. If the wrong disk was pulled out, shut down the system immediately, reconnect the disk, and restart the system.</p> <p>Note: If you reconnect the disk while the system is running, the disk will be marked as a newly added disk and all the data on that disk will be lost during the initialization process.</p>
	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. This is useful if you have multiple ReadyNAS storage systems and you need 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 happens, 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 PC 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 the unit 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 unit, Dashboard displays.

Setup Wizard

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

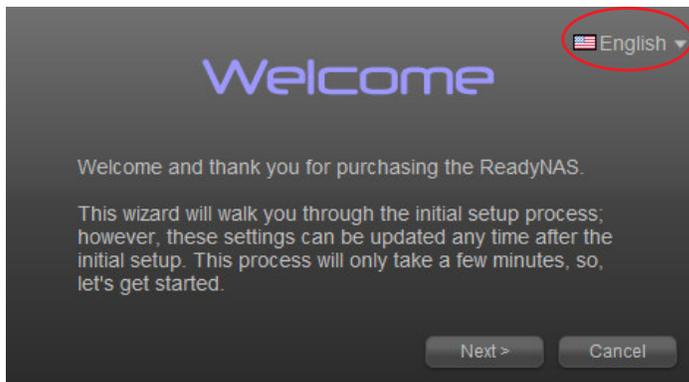


Figure 2. Setup wizard Welcome screen

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 list in the upper right corner. Follow the wizard's prompts to configure the following settings:

- **Time and date.** For more information, see [Clock](#) on page 52.
- **Alert contact.** For more information, see [Email Alert Contacts](#) on page 54.
- **Host name and workgroup.** For more information, see [Host Name and Workgroup](#) on page 64.
- **Administrator password and password recovery question and answer.** For more information, see [Administrator Password](#) on page 57.
- **Product registration.** For more information, see [Diskless Units](#) 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 Shares screen displays.

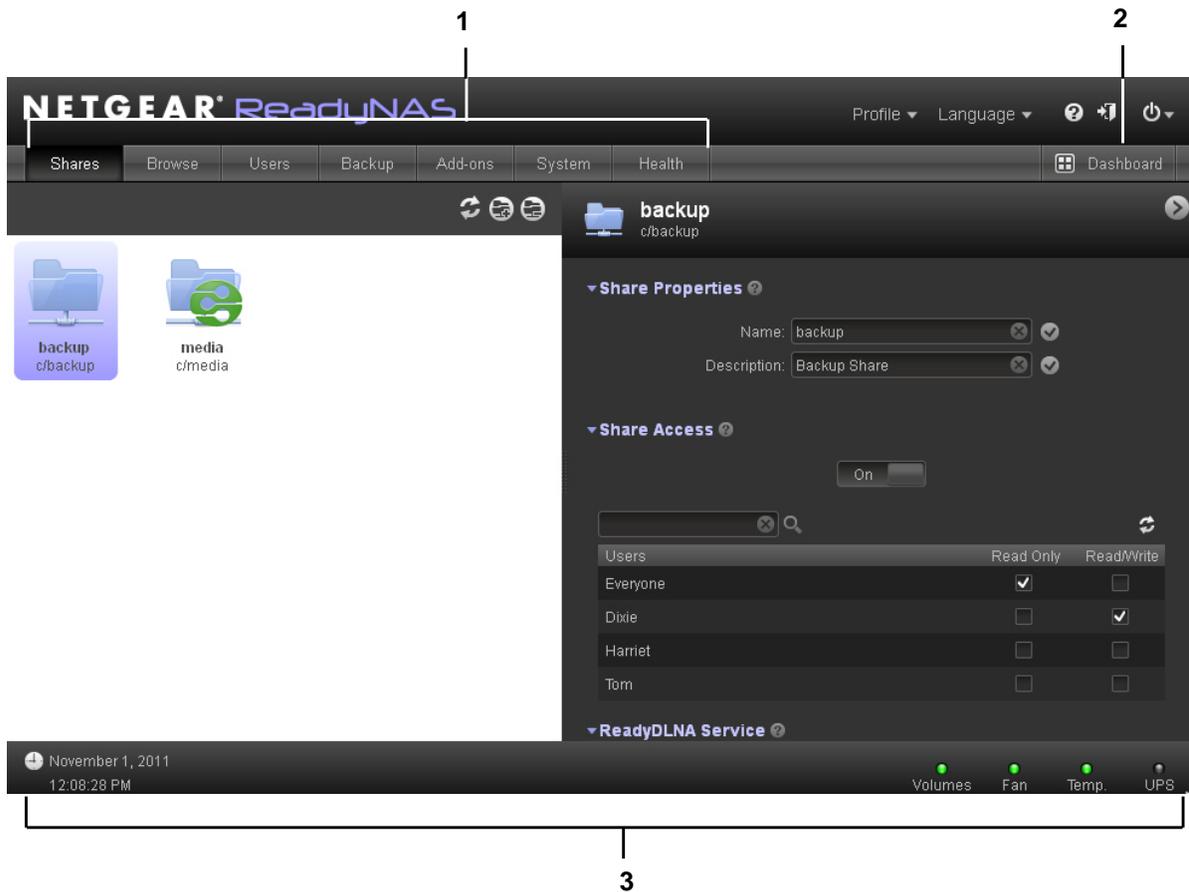


Figure 4. ReadyNAS Dashboard Shares screen

1. Navigation bar
2. Dashboard button
3. Status bar

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.

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

- Date and time
- Volumes
- Fan
- Temperature
- UPS

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

Register Your System

Registration is required before you can use the NETGEAR telephone support service. 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 > Hardware**.

The Hardware screen displays.



2. Click the **Register** button.

Your browser displays a registration page listing information about your ReadyNAS system.

Register your product and be eligible for offers and other exclusive upgrades from Netgear

Please complete the form below to register your product

Product: ReadyNAS-NV v2
Serial number: 70f395ff8572
Firmware: RAIDiator 5.3.1-T52
Memory: 256
MAC address: 70:f3:95:ff:85:72
RAID level: X2
Hard disk #1: Seagate, Seagate ST3250620NS, 9QE33GJE, 3.AEG
Email: **

*** If you enter a valid email address, you will be sent a username and password, giving you access to the NETGEAR customer support site, which will allow you to view your support history and purchase extended warranty options.*

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.

NETGEAR Product Registration

Thank you for buying a NETGEAR product! By registering your product, we can help you have a better experience using our products.

First-time registration	Returning users
<p>There are several benefits to registering your NETGEAR products which includes:</p> <ul style="list-style-type: none">➤ Access to telephone support for your NETGEAR products➤ Special offers from NETGEAR only for registered customers➤ An online list of all of your registered NETGEAR products➤ Activate your support contract(s) <p><input type="button" value="Continue"/></p>	<p>If you already registered a product with NETGEAR, log in to your account</p> <p>E-mail address: <input type="text"/></p> <p>Password: <input type="password"/></p> <p><input type="button" value="Log in"/></p> <p>Forgot your password?</p> <p>Is my product under warranty?</p>

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

2

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 a variety of ways. The most common way to configure disks is using one of the many RAID technologies.

RAID

RAID is short for redundant array of independent disks. RAID is a storage technology that balances data protection, system performance, and storage space by determining how the storage system distributes data. Many different ways of distributing data have been standardized into various RAID levels. Each RAID level offers a 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 a variety of industry-standard RAID levels.

Volumes

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

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

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

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

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

X-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, if you want to add disks or replace disks with larger capacity disks, you must back up the data to another system, add a new 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 that is 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. This means that in a 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.

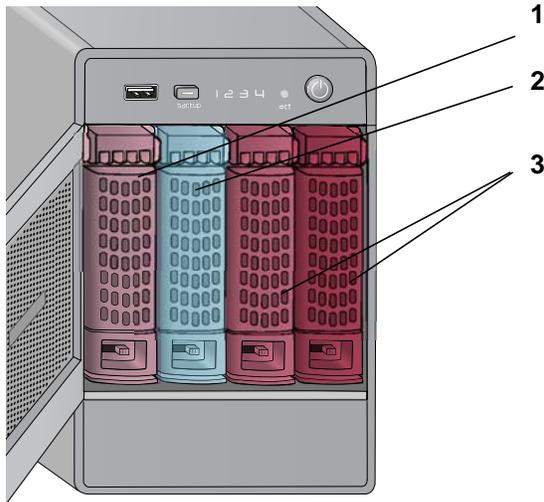


Figure 5. X-RAID2 disk usage

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

Flex-RAID

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

- **RAID 0.** This is the simplest RAID level, 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 allows you to 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 are treated individually by a computer. JBOD does not offer any data protection if a disk fails. However, some people choose to use JBOD because it maximizes

storage capacity. This is 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 53.

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 19.

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 expansion is handled by your ReadyNAS storage system.

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.
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 it up 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 the [Back Up Data Stored On Your ReadyNAS System](#) on page 80.

2. Perform a factory reset reboot.



WARNING!

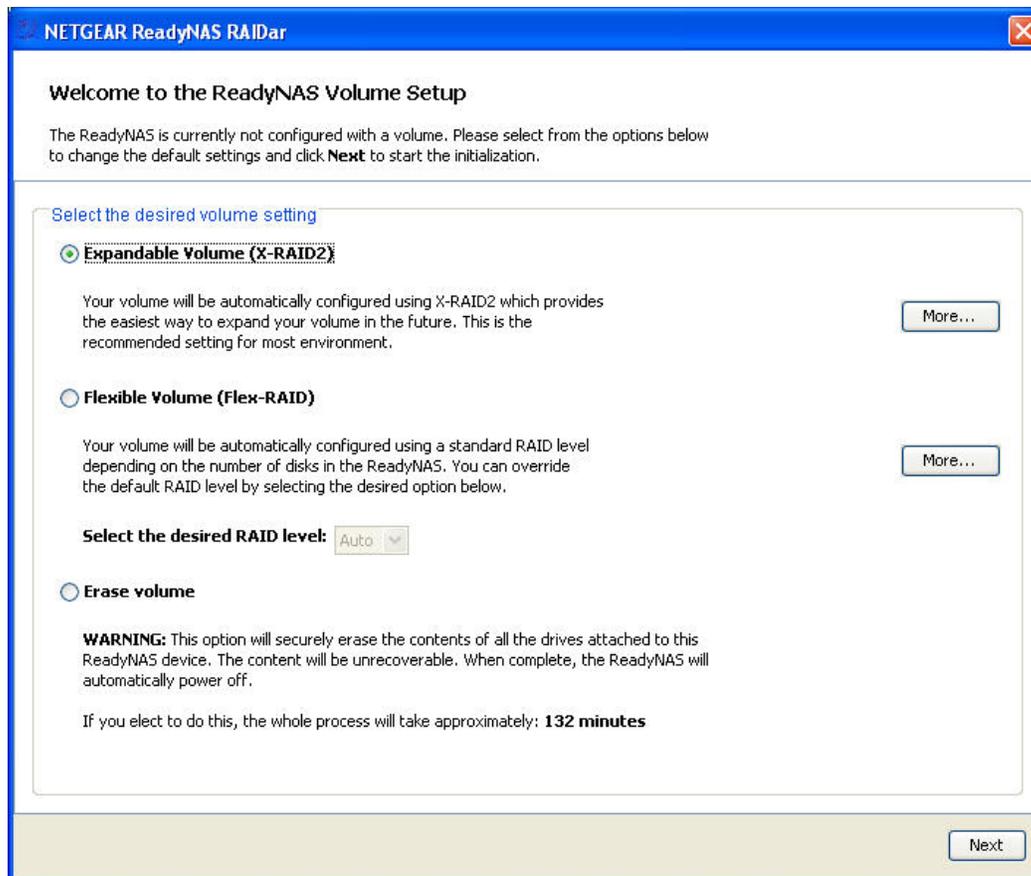
Setting your ReadyNAS system to its factory defaults erases all data and configuration settings.

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. This 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 [Recover Data to Your ReadyNAS System](#) on page 84.

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 [Back Up Data Stored On Your ReadyNAS System](#) on page 80.

2. Perform a factory reset reboot.



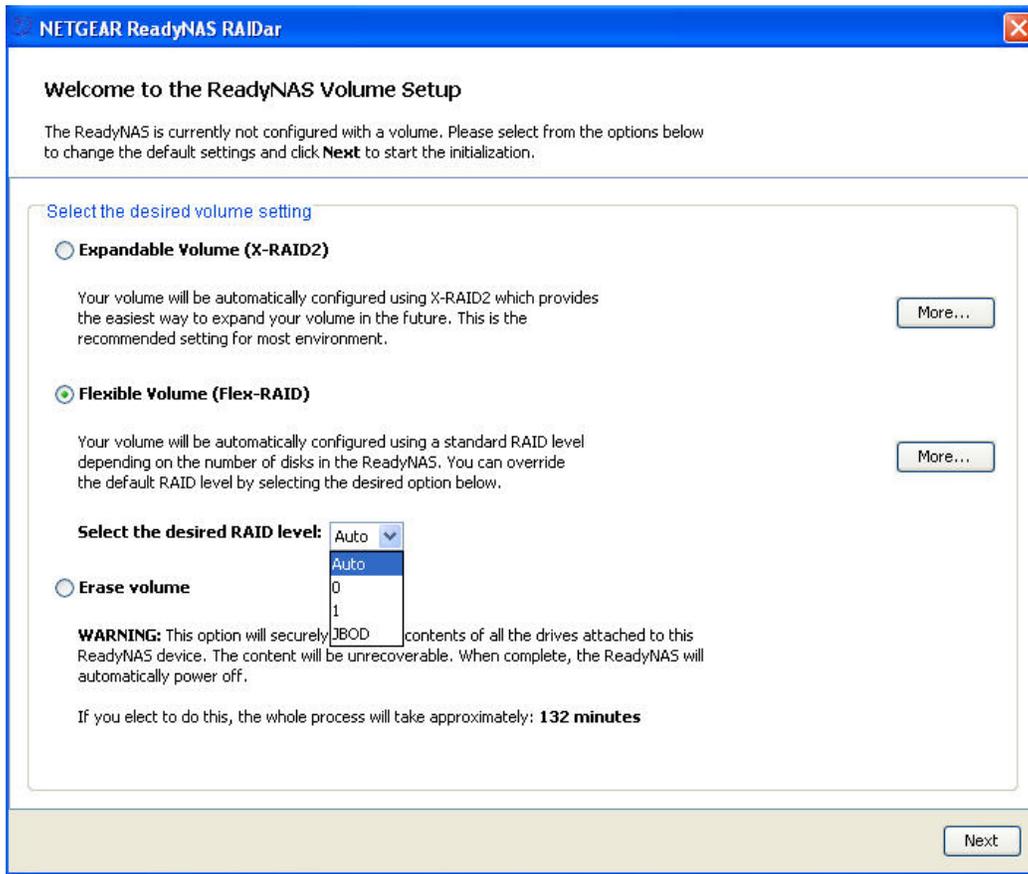
WARNING!

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 list, 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. This 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 [Recover Data to Your ReadyNAS System](#) on page 84.

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 20.

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 [Back Up Data Stored On Your ReadyNAS System](#) on page 80.

2. Perform a factory reset reboot.



WARNING!

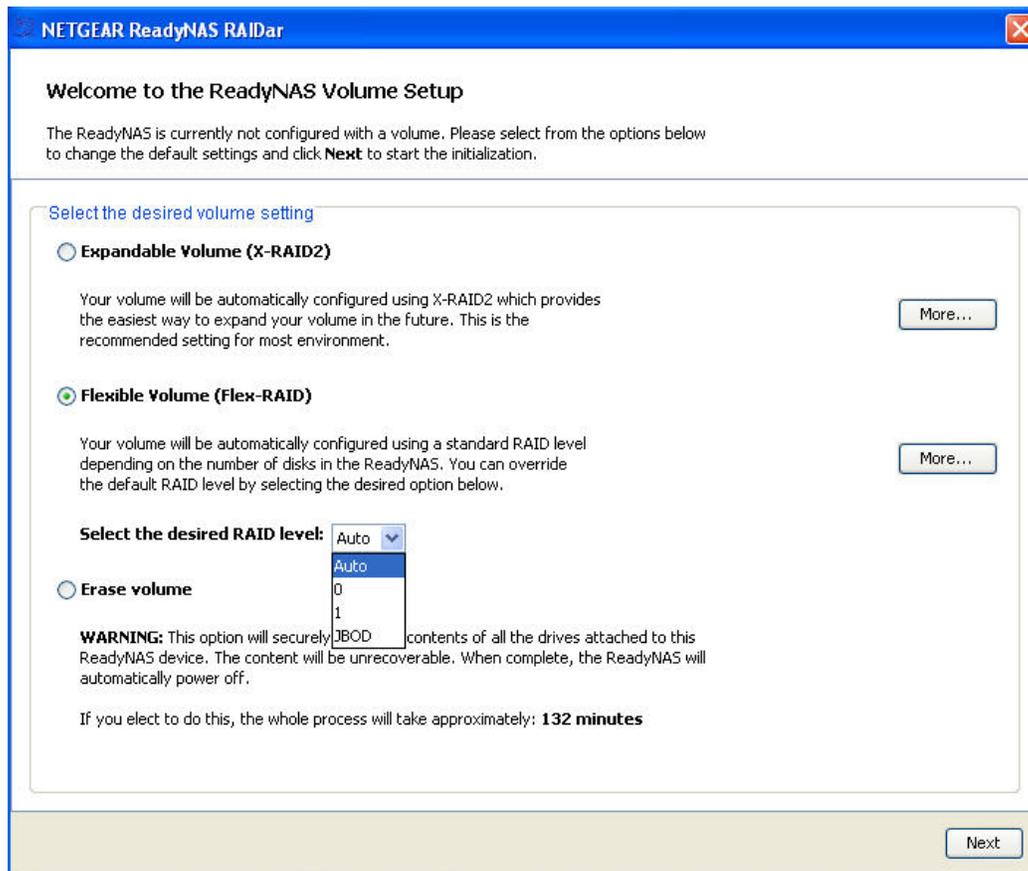
Setting your ReadyNAS system to its factory defaults erases all data and configuration settings.

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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 list, 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. This 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 [Recover Data to Your ReadyNAS System](#) on page 84.

3 Shares

3

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-Sharing Protocols

Shares in your ReadyNAS system are 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. Your ReadyNAS storage system supports the following file-sharing protocols:

- **SMB (Server Message Block).** Used mainly by Microsoft Windows computers and sometimes by Mac OS X computers. This protocol is sometimes referred to as the CIFS (Common Internet File Service) file-sharing protocol.
- **AFP (Apple File Protocol).** Used by Mac OS 9 and Mac OS X computers. Your ReadyNAS system supports AFP 3.3.

When users access a share, it appears in their computer like a hard disk, and users can interact with it like they interact with a hard disk.

Access Rights

For each share you create, you can determine each user's access rights for that share. The following table lists access rights options available to you.

Table 3. 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.

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, maximum file name length might be 83 characters.

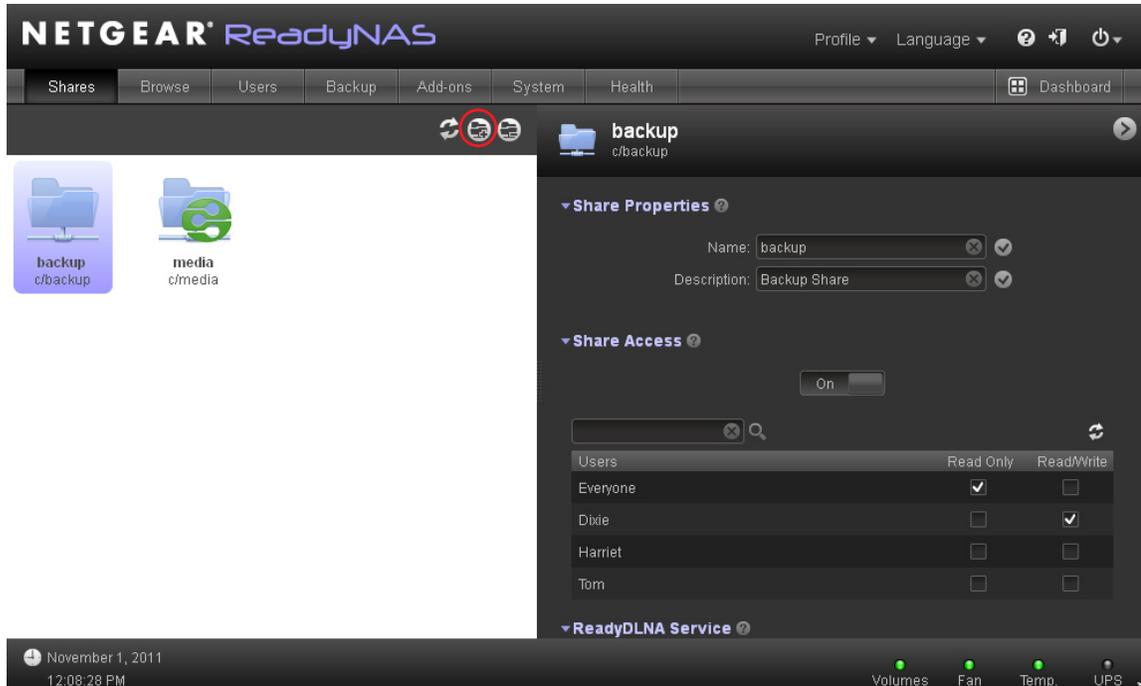
Create Shares

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**.

The Shares screen displays.



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

The New Share dialog box displays.

New Share

Volume:

Name:

Description:

3. Enter the following information about the new share:
 - **Volume.** If your system has only one volume, this drop-down list is dimmed. If you have more than one volume, choose a volume from the drop-down list.
 - **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 significantly 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.

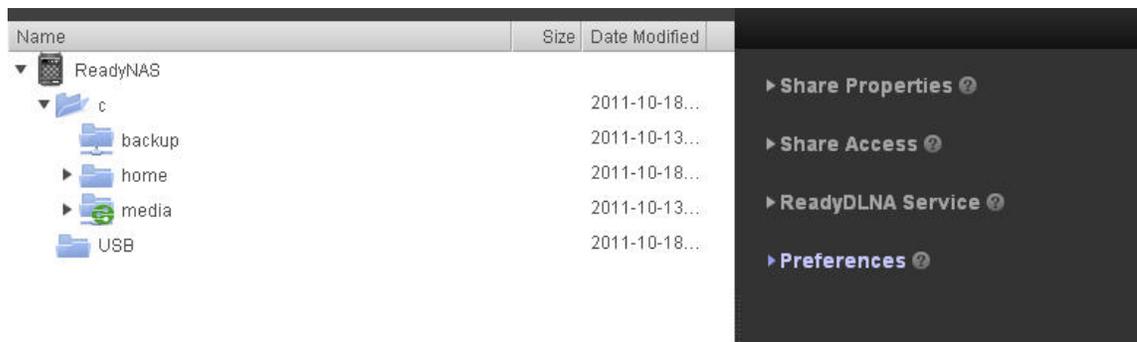
View Shares

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

➤ To view shares:

1. Select **Configure > Browse**.

The Browse screen displays.



2. Click the expand and collapse icons next to each share and folder to navigate through the shares, folders, and files on your ReadyNAS system.

Fine-Tune Share Access

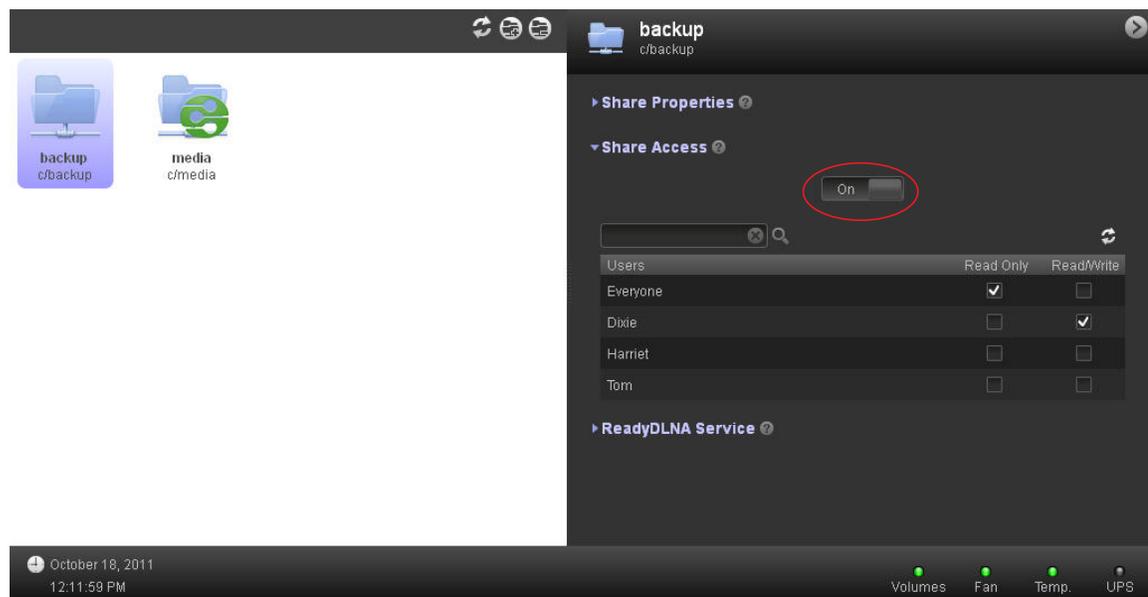
Use Dashboard to fine-tune how shares can be accessed. You can enable or disable all file-sharing protocols and grant or restrict access rights for each share and user. For example, you might want to grant a user read/write access rights on one share but read-only access rights on another share.

For more information about creating and managing users, see [Chapter 4, Users Accounts](#).

➤ To fine-tune share access:

1. Select **Configure > Shares**.

The Shares screen displays.



2. (Optional) Slide the Share Access slider so that Off is visible to disable the file-sharing protocols on this share.

If you disable these protocols, no one will be able to remotely access this share using the SMB or AFP file-sharing protocols from a network-attached device (like a laptop or tablet).

3. (Optional) Adjust access rights for users.

These access rights apply only to this share.

If you select the Everyone check box, you can create exceptions for individual users by selecting a different access rights check box for those users. For example, the figure in step 1 shows that the administrator set permissions for the media share as read-only for everyone but selected the Read/Write check box for user Dixie. This means that all users except Dixie have read-only permission. Dixie has read/write permission.

Create a Folder

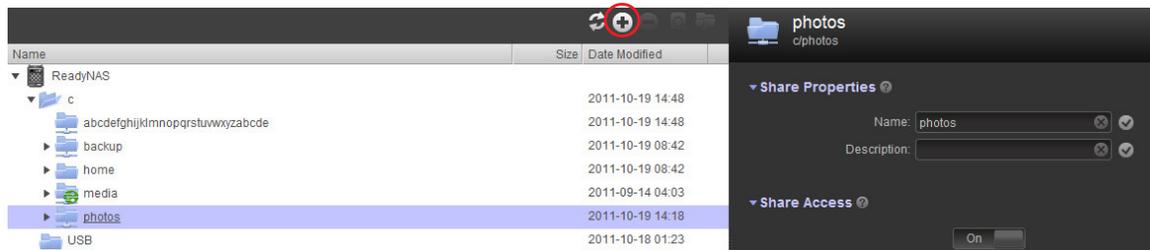
Use Dashboard to add a folder to a share.

➤ **To create a folder:**

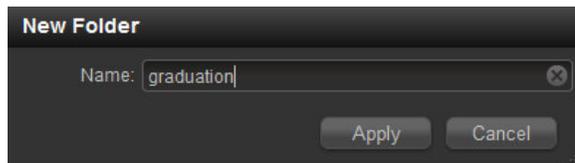
1. Select **Configure > Browse**.

The Browse screen displays.

2. Using the collapse and expand icons, navigate to the share where you want to add a folder.
You can add a folder within another folder by navigating to the correct folder.



3. Highlight the share or folder where you want to add a folder and click the **New Folder** icon.
The New Folder dialog box displays.



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 31.

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.

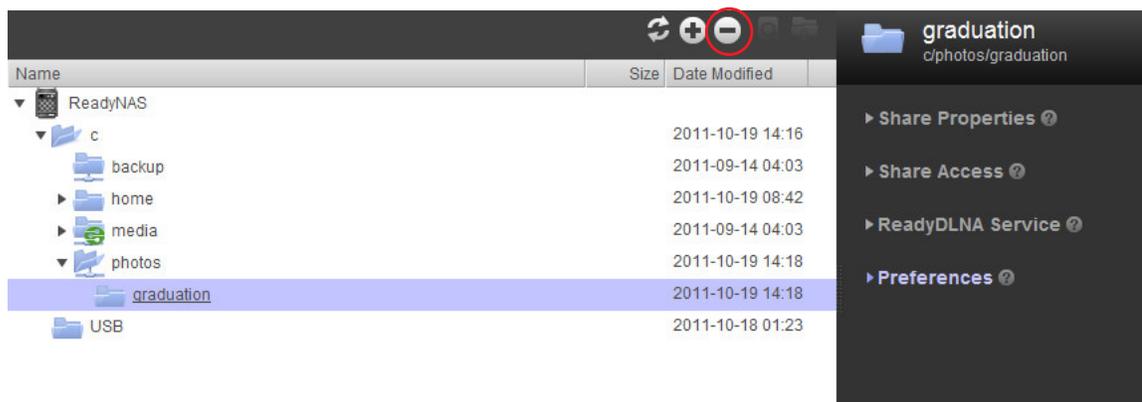
➤ To delete a folder:

1. Select **Configure > Browse**.

The Browse screen displays.

2. Using the collapse and expand icons, navigate to the share where you want to remove a folder.

You can remove a folder within another folder by navigating to the correct folder.



3. 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.
4. Click the **Yes** button.

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

Delete a Share

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



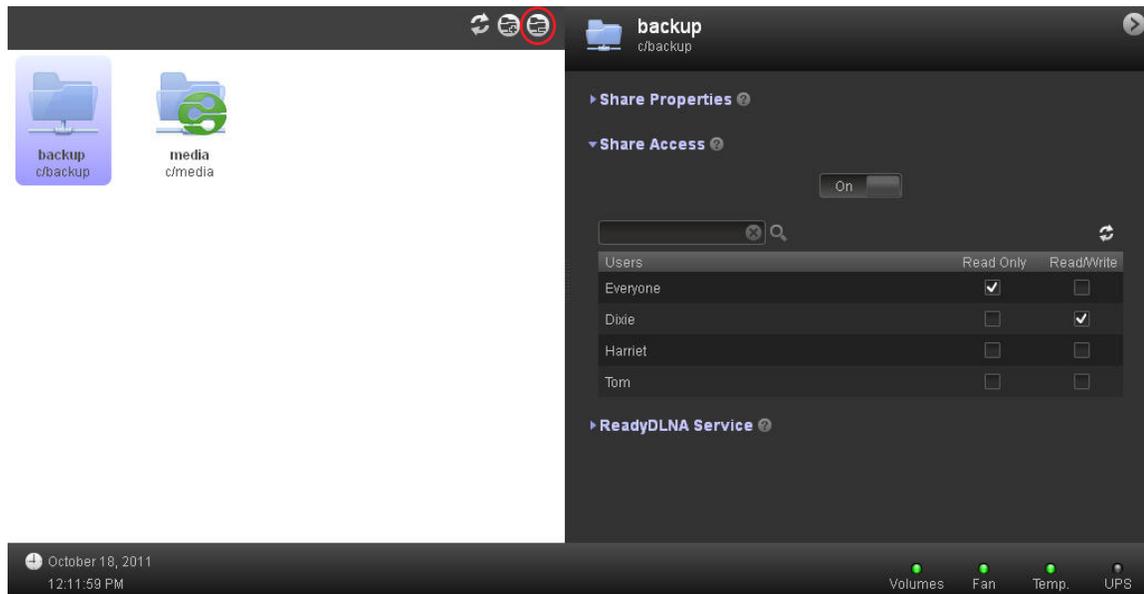
WARNING!

Deleting a share permanently removes the data within that share.

➤ To delete a share:

1. Select **Configure > Shares**.

The Shares screen displays.



2. Highlight a share and click the **Delete 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.

Access Shares Using a Windows Device

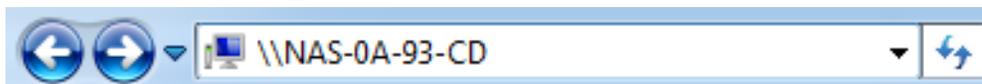
You can access shares on your ReadyNAS system using a network-attached Windows-based device.

➤ **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, your access is limited by the settings configured by the ReadyNAS system administrator for that user.

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

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.

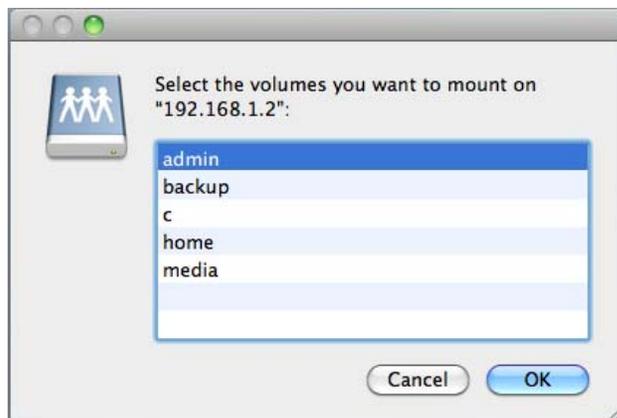
4. Click the **Connect** button.

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, your access is limited by the settings configured by the ReadyNAS system administrator for that user.

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 Mac OS 9 Device

You can access shares on your ReadyNAS system using a network-attached OS 9 device.

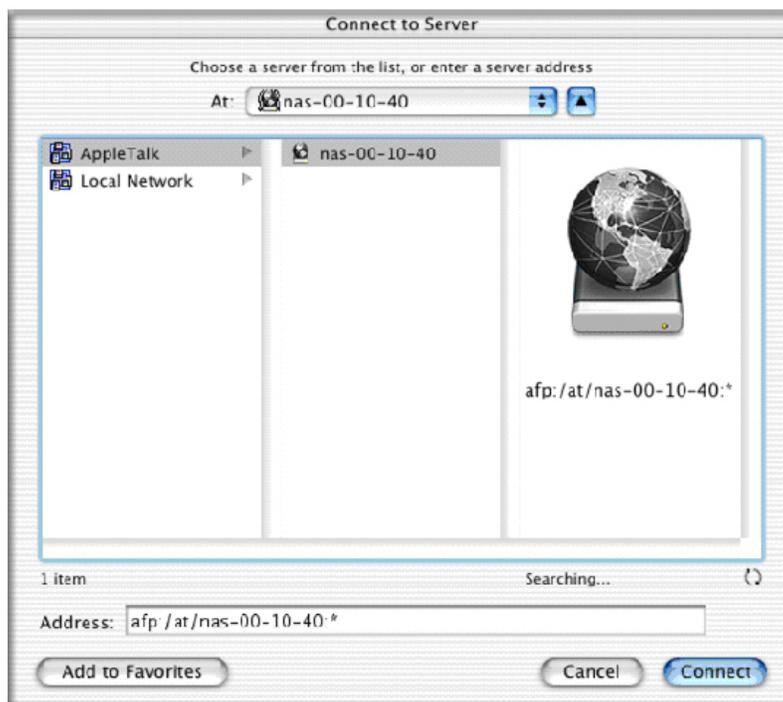
➤ **To access a share using a network-attached Mac OS 9 device:**

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.



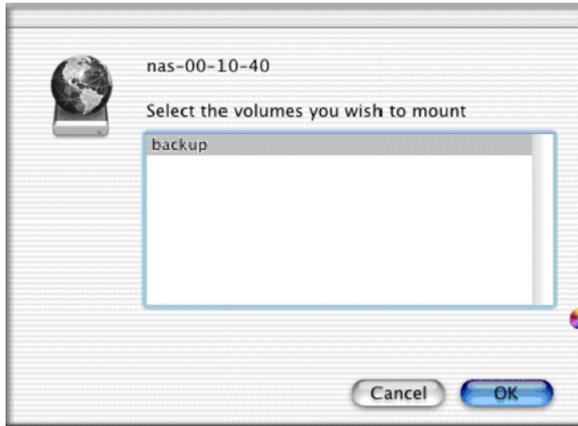
3. Select your ReadyNAS system and click the **Connect** button.

You are prompted to log in to your ReadyNAS system.

4. Enter a user ID and password and click the **Connect** button.

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

You are prompted to select a volume. Mac OS 9 calls your ReadyNAS shares *volumes*.



5. Select a volume (share) 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.

Access Shares Using ReadyNAS Remote

ReadyNAS Remote is a web-based add-on service that allows you to drag and drop files between your ReadyNAS system and your PC or Mac using the SMB file-sharing protocol. All file permissions and share security settings are retained as if you were on your LAN. All data is encrypted so that it is transmitted securely.

ReadyNAS Remote uses an add-on on your ReadyNAS system and a small software program for your Mac or PC.

For more information about installing and managing add-ons on your ReadyNAS system, see [Add-Ons](#) on page 66.

Enable ReadyNAS Remote

The ReadyNAS Remote add-on is preinstalled on your ReadyNAS storage system. Before you can access shares using ReadyNAS Remote add-on, you must enable the add-on your ReadyNAS system.

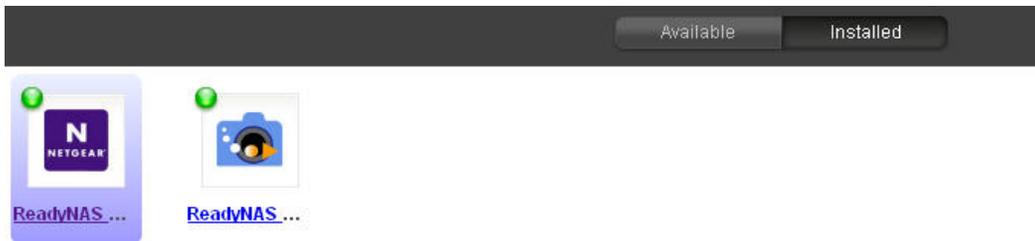
➤ **To enable ReadyNAS Remote:**

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

A screen that lists all available add-ons displays.

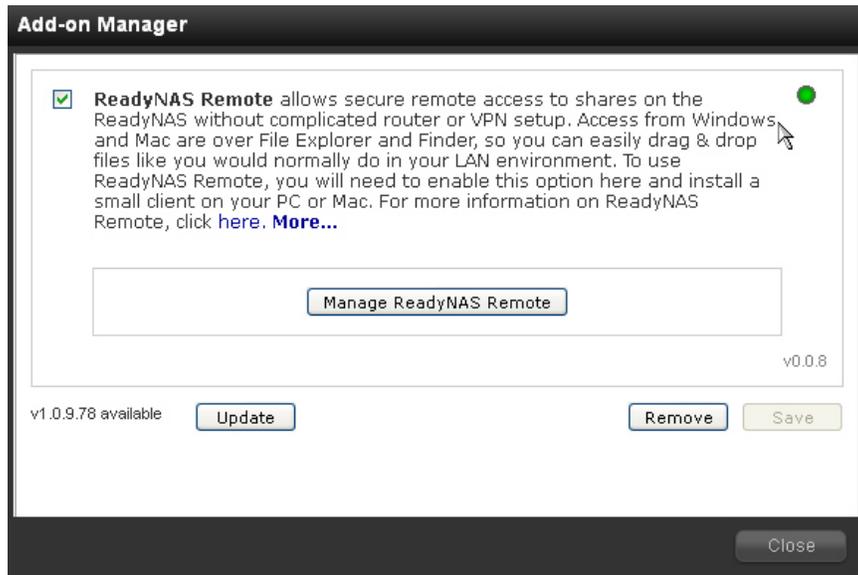
2. Click the **Installed** button.

A screen displays showing all add-on installed on your system.



3. Click the ReadyNAS Remote icon.

The Manage Add-On dialog box displays.



4. Select the **ReadyNAS Remote** check box and click the **Save** button.
5. Click the **Manage ReadyNAS Remote** button.

The Remote Access window displays.

6. Use the interface to grant users permission to access your ReadyNAS system with ReadyNAS Remote add-on.
7. Click the **Apply Settings** button.
8. Click the **here** link in the ReadyNAS Remote description.
An online tutorial about ReadyNAS Remote displays.
9. Scroll down to the links for the ReadyNAS Remote client software versions.
10. Click the link for the appropriate version for your Mac or PC.
11. Follow the prompts to download the ReadyNAS Remote client software to your computer.

Install ReadyNAS Remote Client Software

Before you can access shares using ReadyNAS Remote, you must install the ReadyNAS Remote client software on your Mac or PC.

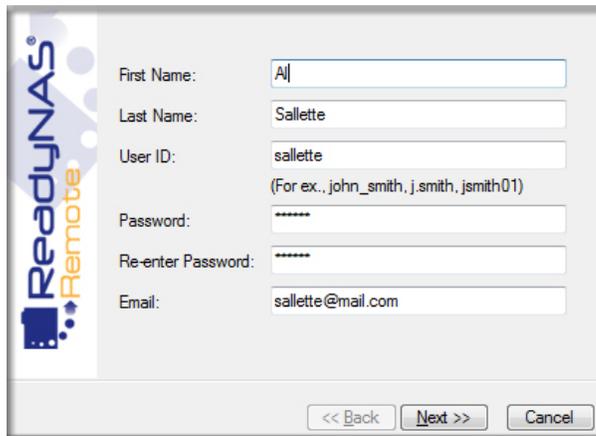
➤ **To install the ReadyNAS Remote client software on your computer:**

1. Install the ReadyNAS Remote client software.

A wizard guides you through the installation process.

When you complete the installation, you are prompted to create a ReadyNAS Remote account.

2. Follow the wizard's prompts to create a free ReadyNAS Remote account.



First Name: A

Last Name: Salette

User ID: salette
(For ex., john_smith, j.smith, jsmith01)

Password: *****

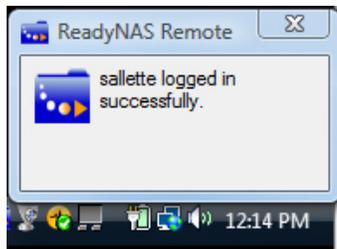
Re-enter Password: *****

Email: salette@mail.com

<< Back Next >> Cancel

Remember the user ID and password you create; you need these credentials to access shares.

A pop-up window displays when you successfully register with the ReadyNAS Remote web service.



Access Shares

You can use ReadyNAS Remote to drag and drop files between your computer and your ReadyNAS system, even when your computer is not on the same LAN as your ReadyNAS system.

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

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. Launch the ReadyNAS Remote client software on your PC or Mac.
3. Log in to your ReadyNAS Remote account.
4. Connect to your ReadyNAS system.
5. Your shares open in a File Explorer (PC) or Finder (Mac) window.

You can now drag and drop files between your PC or Mac and your ReadyNAS system as though you were on the ReadyNAS LAN.

4 Users Accounts

4

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

- *Basic User Concepts*
- *User Accounts*

Basic User Concepts

Users are the people to whom you grant access to your storage system. 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 being used at home, you might decide that each member of the family should have a user account, but that only the parents can access financial data stored on your system. You might decide that all accounts can access photos and music stored on the system. You can set the appropriate permissions for each user.

User Accounts

Use Dashboard to create, manage, and delete user accounts on your ReadyNAS storage system.

Create User Accounts

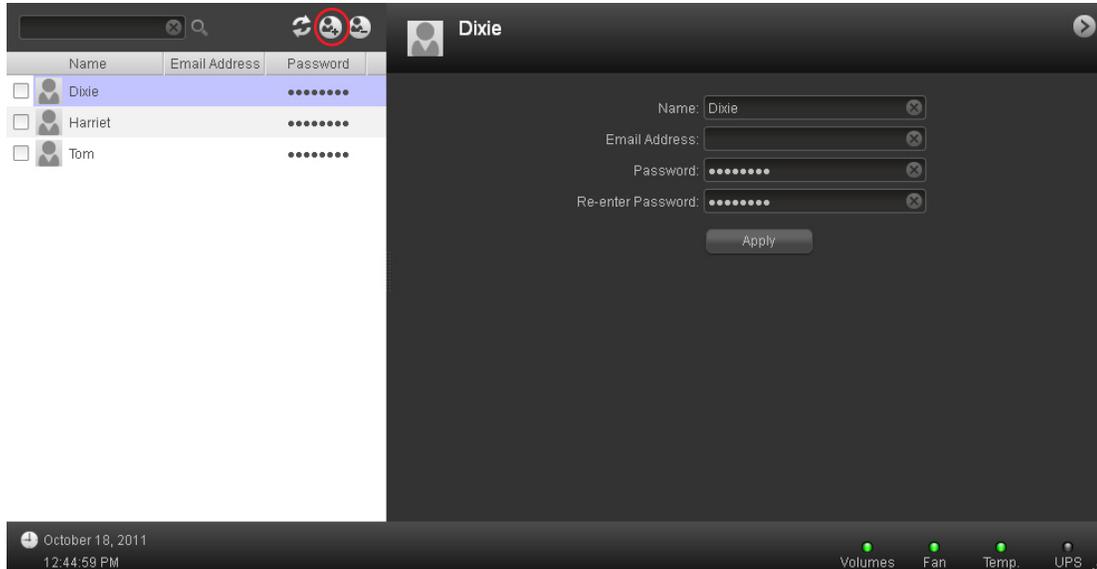
You can create up to 32,000 user accounts on your ReadyNAS storage system. However, creating a large number of accounts on your system can degrade its performance, so NETGEAR recommends creating and maintaining only those accounts you need, preferably fewer than 100.

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

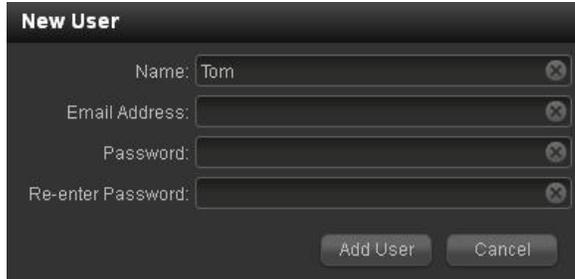
➤ **To create a user account:**

1. Select **Configure > Users**.

The Users screen displays.



2. Click the **New User** icon.
3. The New User dialog box displays.



4. Enter the following information for the new user:
 - **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 significantly 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. Re-enter the user password.
5. Click the **Add User** button.

A new user account is created.

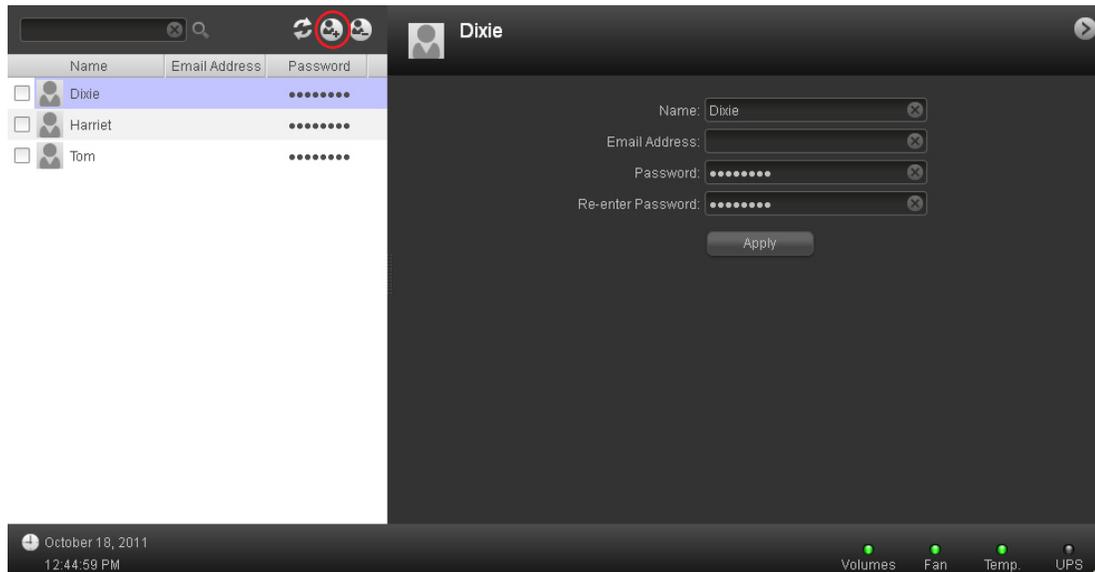
Edit User Accounts

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

➤ **To edit a user account:**

1. Select **Configure > Users.**

The Users screen displays.



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.

4. Click the **Apply button.**

Your changes are saved.

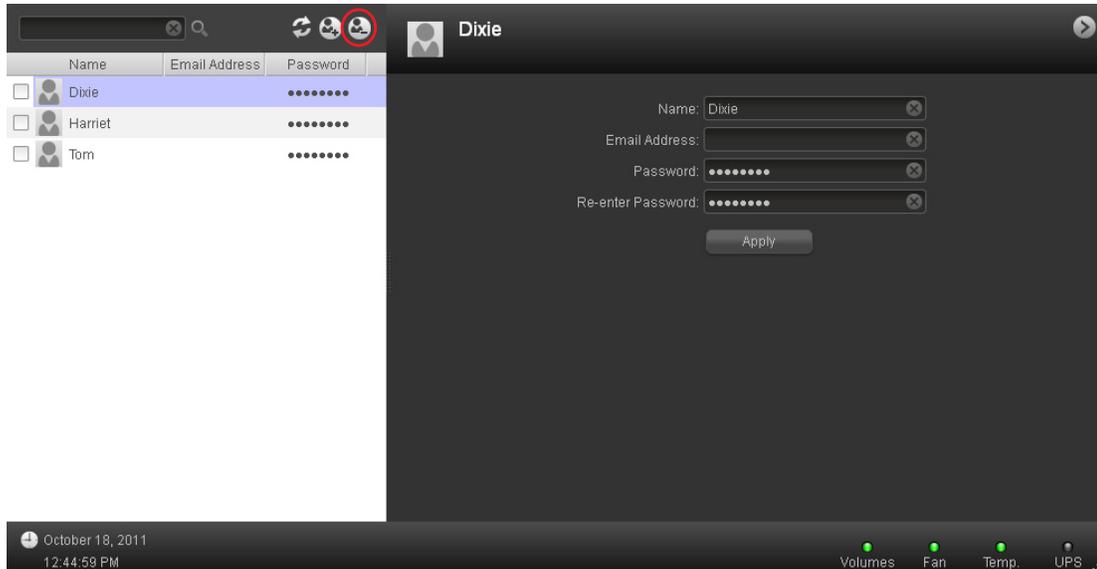
Delete User Accounts

Use Dashboard to delete user accounts. Note that 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 > Users**.

The Users screen displays.



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 delete.

The right pane displays the settings for that account.

3. Click the **Delete** icon.

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

4. Click the **Yes** button.

The user is deleted.

5 System Settings

5

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 Configuration*
- *Network Settings*
- *Add-Ons*
- *USB Storage Devices*

System Configuration

Use Dashboard to manage the configuration of your ReadyNAS storage system.

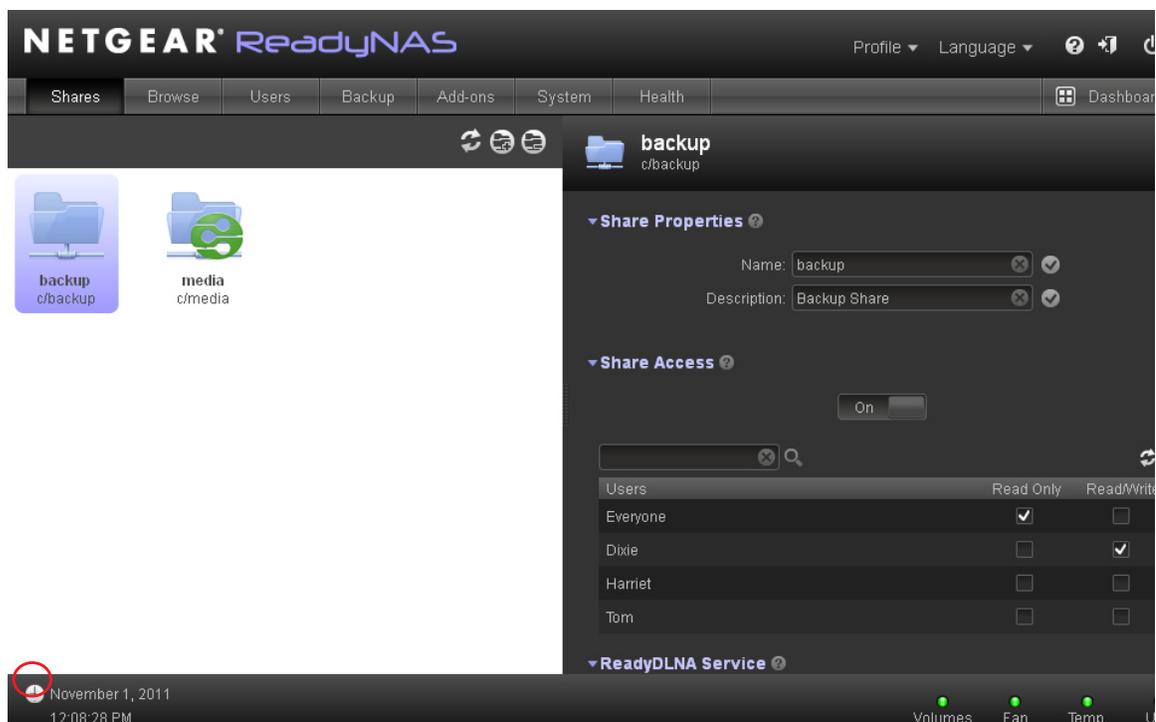
Clock

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

➤ **To set system time and date:**

1. Click the **Configure** button.

The Shares screen displays.



2. Click the clock icon in the lower left corner of the screen.

- The Date and Time Settings dialog box displays.



- From the Time Zone drop-down list, 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.
- 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 lists dim and your system's 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 lists and calendar to manually set the time and date.
- Click the **Apply** button.
Your settings are saved.

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 smart phone to help you monitor your ReadyNAS system when you are away from it.

➤ **To manage alert email contacts:**

1. Select **Configure > System > Alerts.**

The Alerts screen displays.



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 Provider drop-down list, 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 (SMTP) settings for your provider.

5. (Optional) Enter the details for your email service provider.

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

6. In the User field, enter your email address, and in the Password field, enter your email password.

Your storage system uses these credentials to authenticate with your email service provider's outgoing mail server so that it can send email alerts.

7. (Optional) Click the **Send Test Message button to determine if you configured the contact information correctly.**

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.

8. 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, you might choose to temporarily disable an alert if you are aware of a problem.

➤ To manage alert event settings:

1. Select **Configure > System > Alerts**.

The Alerts screen displays.

The screenshot shows the Alerts configuration page. On the left, there are input fields for 'Alert Contact Email Address', 'Email Account Provider' (set to 'Internal'), 'User', and 'Password'. Below these are 'Advanced Options' including 'SMTP Server', 'SMTP Port', 'From', and 'Use TLS' (unchecked). A 'Send Test Message' button is at the bottom. On the right, the 'Alert Events' section has checkboxes for 'Disk Failure', 'Disk Full', 'Fan', 'Volume', 'Disk Temperature', 'Power', and 'UPS', all of which are checked. The 'Other Alert Settings' section has checkboxes for 'Shut down the system when a disk fails or no longer responds' (unchecked) and 'Shut down the system when the disk temperature exceeds safe levels' (checked).

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 gracefully power off your ReadyNAS system if a disk fails.
- Select the **Shut down the system when disk temperature exceeds safe level** check box to gracefully power off your ReadyNAS system if the disk temperature exceeds the normal range.

4. Click the **Apply** button.

Language

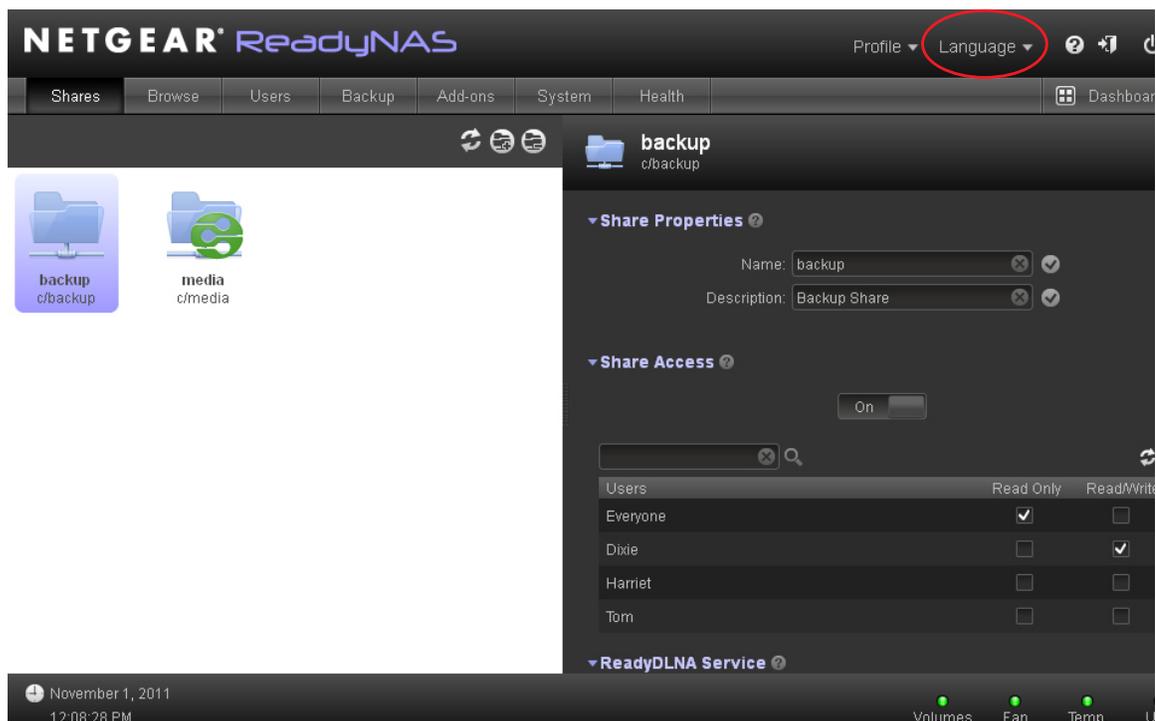
To ensure that your ReadyNAS storage system correctly displays file names, configure your system to use the appropriate character set. For example, selecting Japanese allows the ReadyNAS to support files with Japanese names in Windows Explorer.

Note: This setting does not control the language used in the Dashboard interface. To change the language in Dashboard, adjust your browser's language option.

➤ **To configure language settings:**

1. Click the **Configure** button.

The Shares screen displays.



2. From the Language drop-down list, select a language.

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

3. Click the **Apply** button.

Your settings are saved.

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.

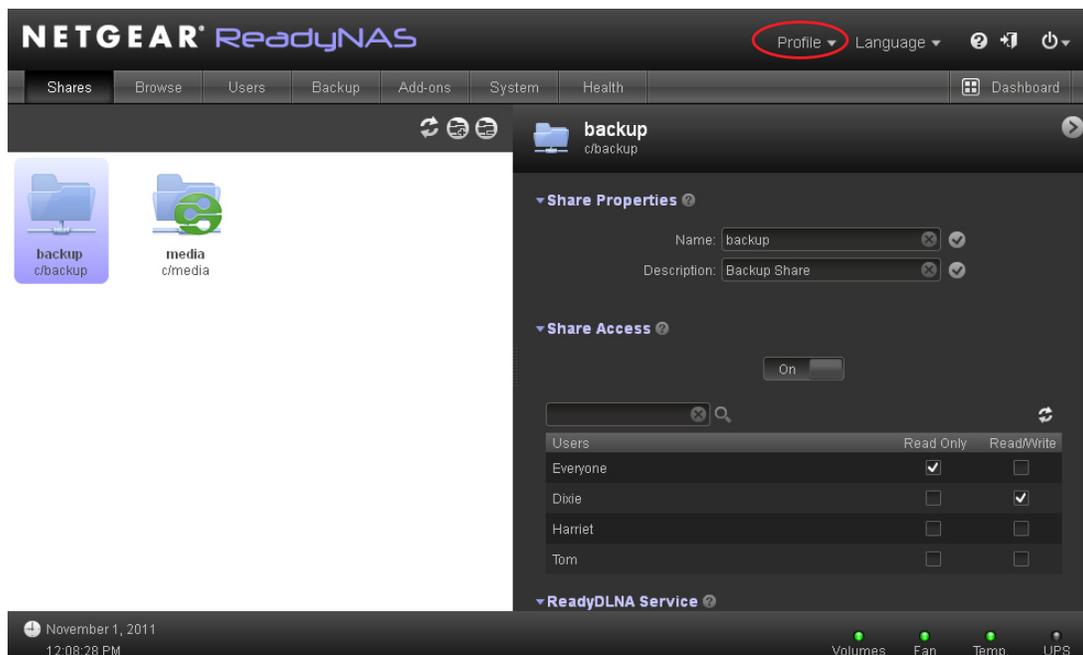
Change the Administrator Password

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. Click the **Configure** button.

The Shares screen displays.



2. Select **Change Admin Password** from the Profile drop-down list.

The Change Admin Password dialog box displays.

Change Admin Password

Password:

Confirm Password:

Password Recovery Question:

Password Recovery Answer:

Recovery Email Address:

3. Complete the following fields:
 - **Password.** Enter a new password. Your administrator password can have a maximum of 255 characters.
 - **Confirm Password.** Re-enter your new password.
 - **Password Recovery Question.** Choose a question that very 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 where you want a reset password to be sent.
4. Click the **Apply** button.

Your settings are saved.

Recover Your Administrator Password

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

- **Using NETGEAR's 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 57.
- **Performing 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 NETGEAR's 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 57. If you lost your password but did not enable administrator password recovery, see [Recover Your Administrator Password Using an OS Reinstall Reboot](#) on page 59.

➤ **To recover your administrator password using NETGEAR's password recovery tool:**

1. Using a web browser, visit https://<ReadyNAS_IP_address>/password_recovery.
<ReadyNAS_IP_address> is the IP address of your ReadyNAS system.

The ReadyNAS password recovery screen displays.



The screenshot shows a web browser window titled "Password Recovery". The page contains the following text and form elements:

Enter the password recovery email address and answer the question below. If the input is correct, the admin password will be reset, and the new password will be sent to the admin email address on file.

Password recovery email address:

Password recovery question: what's your nephew's middle name

Password recovery answer:

2. Enter the email address and password recovery answer 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.

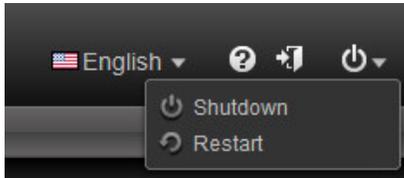
The process for performing an OS reinstall reset reboot varies by storage system. For more information about how to perform a factory reset reboot, see the *ReadyNAS Duo v2 and NV+ v2 Hardware Manual*.

System Shutdown

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.



A drop-down list displays.

2. Choose an option:
 - **Shutdown.** 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.

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.

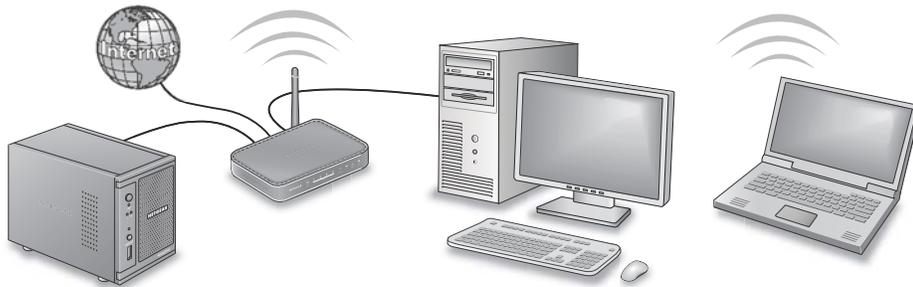


Figure 6. Typical network setup including a ReadyNAS storage system

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

Ethernet

Your ReadyNAS storage system uses Ethernet technology to transfer information on 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 a 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 choose to manually 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 device.

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:**

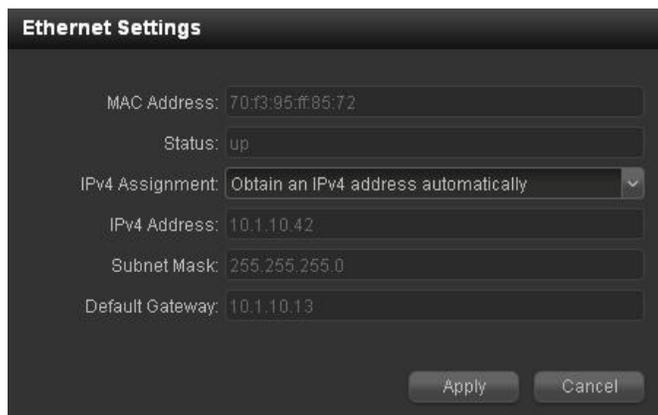
1. Select **Configure > System > Network**.

The Network screen displays.



2. Click the Ethernet configure icon.

The Ethernet Settings dialog box displays.



3. (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 unit 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 maintains the same IP address, even in DHCP mode.

- **Use the following IPv4 address.** Take care to correctly enter the IP address. 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 manually enter an IP address:

- 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 select choose to manually enter an IP address, you must provide DNS server information if you want to access your ReadyNAS system over the Internet. For more information, see [DNS](#) on page 63.

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

4. 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 much easier to remember a name (for example, www.readynas.com) than it is to remember 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 automatically 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 if you want 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 61.

➤ **To manually configure DNS settings:**

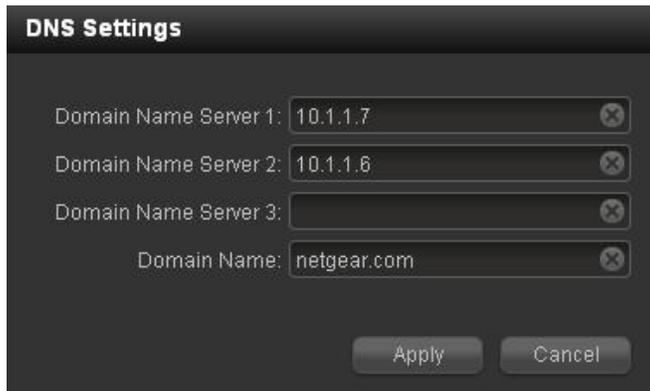
1. Select **Configure > System > Network**.

The Network screen displays.



2. Click the DNS Settings configure icon.

The DNS Settings dialog box displays.



3. In at least one Domain name server field, enter at a DNS server IP address.
4. (Optional) In the Domain name field, enter a domain name.
5. 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 PC, your Mac, 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:**

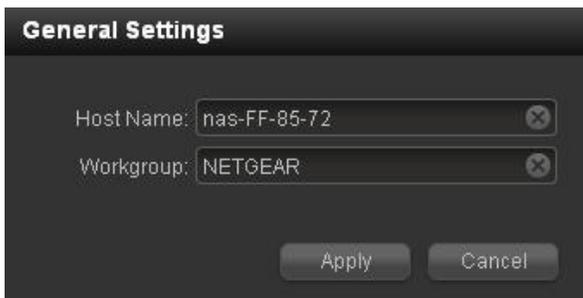
1. Select **Configure > System > Network**.

The Network screen displays.



2. Click the General Settings configure icon.

The General Settings dialog box displays.



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 significantly 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 significantly lower. You can use most alpha, numeric, and punctuation characters for a share name.

5. Click the **Apply** button.

Your settings are saved.

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 developed by NETGEAR, NETGEAR's partners, and community 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 following add-ons are preinstalled on your ReadyNAS system:

- **ReadyNAS Remote.** Allows secure, remote access to shares on your ReadyNAS without complicated router or VPN setup. After you access your shares from a PC using Windows File Explorer or from a Mac using Finder, you can easily drag and drop files within your LAN. For more information, see [Access Shares Using ReadyNAS Remote](#) on page 42.
- **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**.

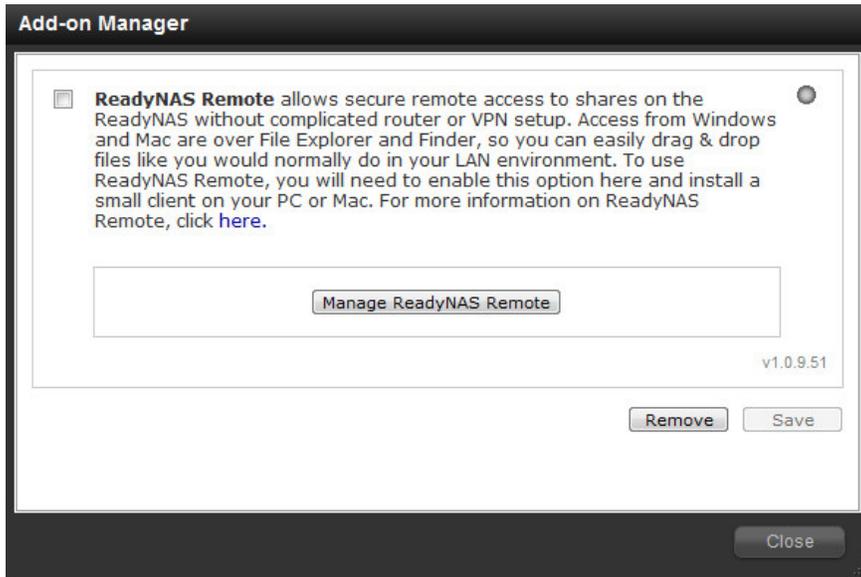
A screen displays listing all available add-ons.

2. Click the **Installed** button.

A screen displays listing all add-ons installed on your system.



- (Optional) To manage an installed add-on, click the link below the add-on's icon.
An Add-on Manager dialog box displays listing information about that add-on displays.



- (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.

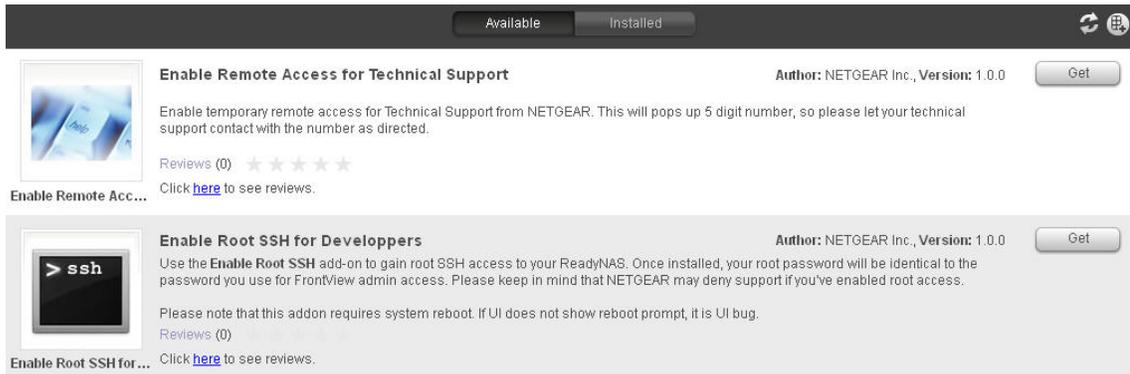
Find and Install Add-ons Using Dashboard

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

➤ To browse for and install available add-ons:

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

A screen displays showing all available add-ons.



- 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.

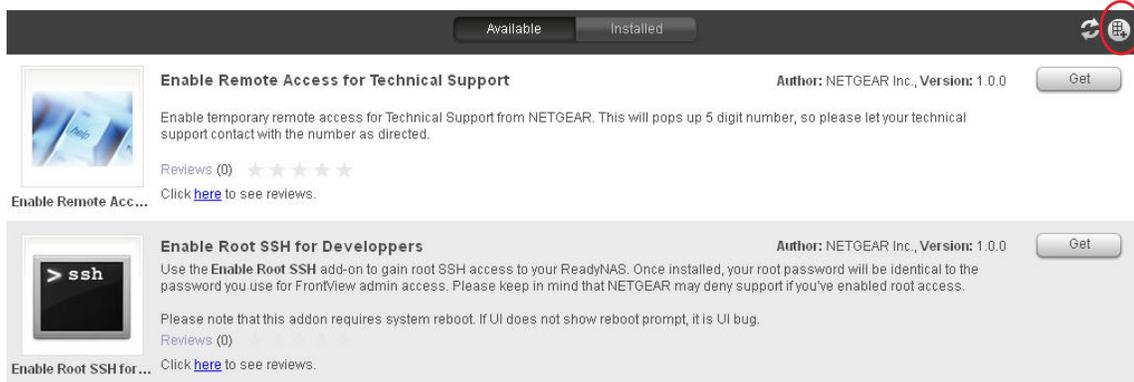
Install Standalone Add-Ons

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:

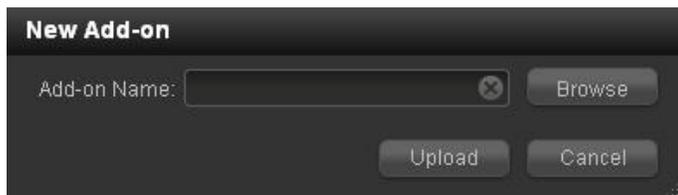
1. Select **Configure > Add-ons**.

A screen displays showing all available add-ons.



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

The New Add-on dialog box displays.



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.

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.

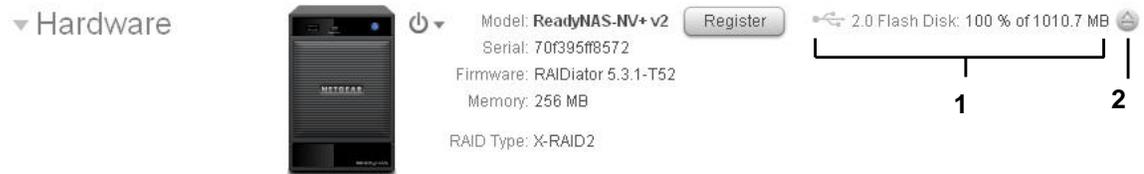
➤ To connect a USB storage device:

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 **Configuration > System > Hardware**.

The Hardware screen shows information about the USB storage device.



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

6 Monitor and Maintain

6

This chapter describes how to monitor and maintain your ReadyNAS system. It contains the following sections:

- *Monitor*
- *Maintain*

Monitor

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

System Health

Dashboard's home screen provides a snapshot of your system's status. More detailed information is available on the Health screen.

➤ **To view system status:**

Select **Configure > Health > Info**.

The Info screen displays.



System Logs

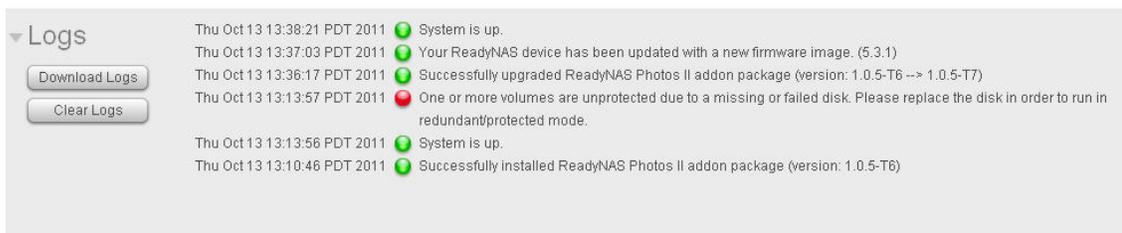
System logs provide information about the status of various system management tasks, including a timestamp. These logs are used primarily to troubleshoot problems. If you call NETGEAR technical support, the representative might ask you to send your system logs.

In addition to system logs, your ReadyNAS storage system also maintains backup logs. For more information, see [View a Backup Log](#) on page 98.

➤ **To manage system logs:**

1. Select Configure > Health > Logs.

The Logs screen displays.



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.

Maintain

Use Dashboard to update the firmware on your system, manage power usage, and manage UPS devices.

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 > Update**.

The Update screen displays.

The screenshot shows the 'Update' screen with the following content:

Check for Updates	Update Settings
Click the Check for Updates button to see if any updates are available for your system	Click the Install Firmware button and follow the prompts to select a location where your new firmware image is located and to start the update sequence.
<input type="button" value="Check for Updates"/>	<input type="button" value="Install Firmware"/>
Return system to its factory default settings	
Click the Perform Factory Default button below if you wish to reset this device to the factory default state.	
WARNING This option clears ALL data and configuration on this device, with no recovery option. Backup any data you wish to save before selecting this option.	
<input type="button" value="Perform Factory Default"/>	

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.

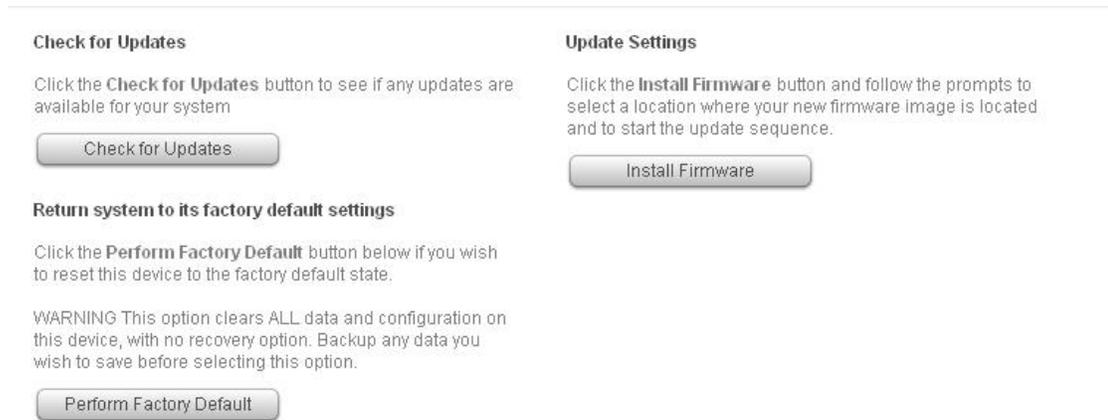
➤ **To update firmware locally:**

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 > Update**.

The Update screen displays.



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.

Power Timer

You can configure your ReadyNAS system to power itself on and off automatically according to a schedule. Note that if you schedule this device to power off, data transfers will be interrupted and pending backup jobs will not run.

- **To enable the power timer:**

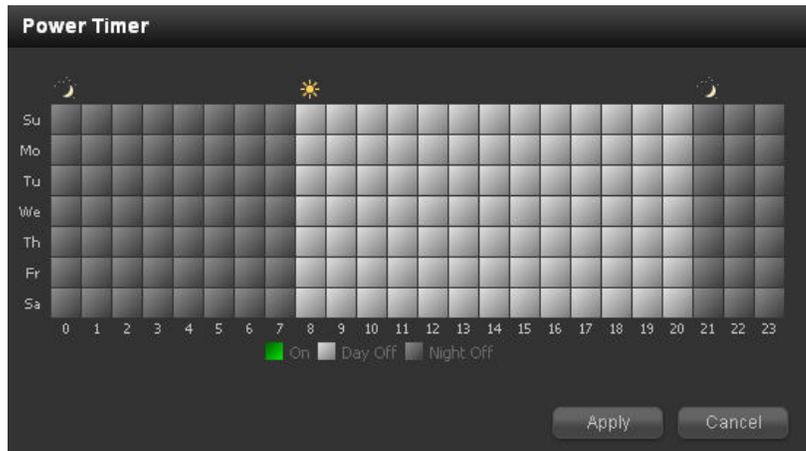
1. Select **Configure > System > Power**.

The Power screen displays.



2. Select the **Enable power timer** check box and click the configure icon.

The Power Timer dialog box displays.



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

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

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 units 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 units, 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.

7 Backup and Recovery

7

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 happen to you.

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. Both home and business users 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:

- *Basic Backup Concepts*
- *Back Up Data Stored On Your ReadyNAS System*
- *Recover Data to Your ReadyNAS System*
- *Back Up Data Stored on a Network-Attached Device*
- *Recover Data to a Network-Attached Device*
- *Manage Backup Jobs*
- *Time Machine*

Basic 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 in the event that a disk fails. For more information about the protection that RAID configuration offers, see [RAID](#) on page 18.

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.

Your ReadyNAS system can manage backup and recovery processes for many devices on your network. For example, you can back up data that is stored on your ReadyNAS storage system to other devices, for example, a USB drive.

The following figure shows the roles that devices play when you back up data that is stored on your ReadyNAS system to another device, and when you return that data to the ReadyNAS system with a recovery process.

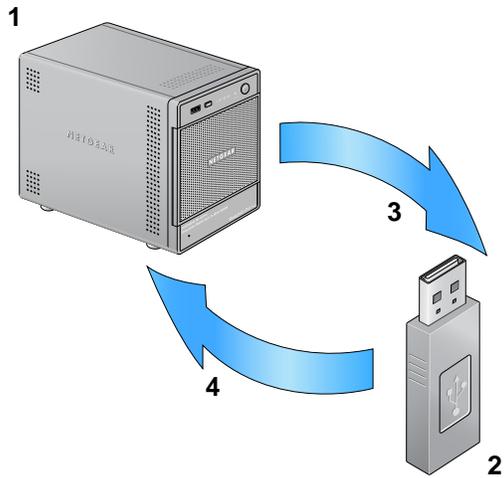


Figure 7. Using a device to back up and recover data stored on a ReadyNAS system

1. ReadyNAS storage system serving as backup source and recovery destination
2. USB drive serving as backup destination and recovery source
3. Backup process
4. Recovery process

The backup process illustrated in this figure is described in [Back Up Data Stored On Your ReadyNAS System](#) on page 80.

The recovery process illustrated in this figure is described in [Recover Data to Your ReadyNAS System](#) on page 84.

You can also use your ReadyNAS storage system to store backed-up data from other devices, like your laptop.

The following figure shows the roles that devices play when you back up data that is stored on a device, for example, a laptop computer, to your ReadyNAS system, and the roles that devices play when you return that data to that device with a restore process.

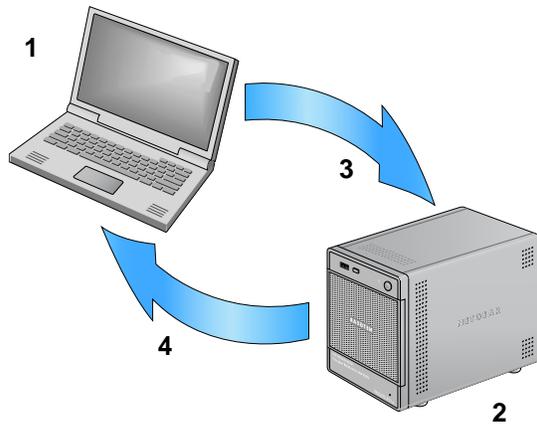


Figure 8. Using a ReadyNAS system to back up and recover data stored on a laptop computer

1. Laptop computer serving as backup source and recovery destination
2. ReadyNAS storage system serving as backup destination and recovery source
3. Backup process
4. Recovery process

The backup process illustrated in this figure is described in [Back Up Data Stored on a Network-Attached Device](#) on page 88.

The recovery process illustrated in this figure is described in [Recover Data to a Network-Attached Device](#) on page 92.

Back Up Data Stored On Your ReadyNAS System

You can use Dashboard to create jobs to back up data that is stored on your ReadyNAS to another network-attached device.

The following figure illustrates the backup process described in this section.

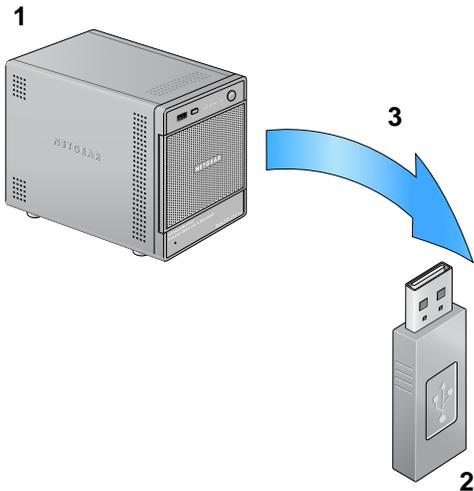


Figure 9. Backing up data from a ReadyNAS system to a USB drive

1. ReadyNAS system serving as backup source
2. USB drive serving as backup destination
3. Backup process

By default, all backup jobs are scheduled to automatically run every day. You can edit these settings after you create each backup job. For more information, see [Edit a Backup Job](#) on page 96.

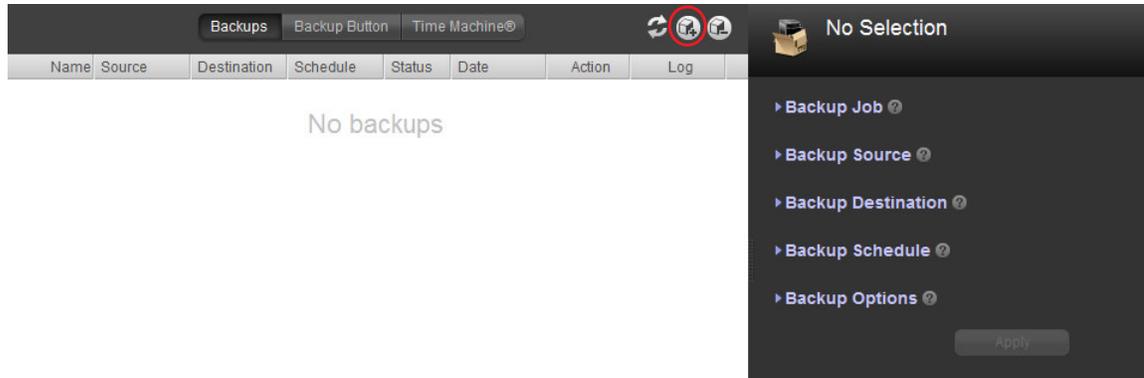
Before trusting your backup job to a schedule, it is a good practice to manually perform the backup to make sure that access to the remote backup source or destination is granted, and that the backup job can be done within the backup frequency you selected. You can do this after you create each backup job. For more information, see [Manually Start a Backup Job](#) on page 98.

Backup and recovery jobs using Time Machine require different procedures. For more information, see [Time Machine](#) on page 100.

➤ **To back up data stored on your ReadyNAS system:**

1. Select **Configure > Backup.**

The Backup screen displays.



2. Click the **New Backup Job icon.**

The New Backup Job dialog box displays.

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

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

4. From the Source drop-down list, select a backup source from your ReadyNAS system.

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

5. From Destination drop-down list, select a destination that is not part of your ReadyNAS system.

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

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

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

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, or 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's 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 98.

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

9. (Optional) In the Backup Options section, adjust option settings.
- From the Schedule full backup drop-down list, select how frequently you want a full backup to be run.
 - From the On completion send drop-down list, select what type of logs to send when the recovery job finishes.

You can send a log that lists only errors encountered 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 98.

- (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 not enabling this option unless your destination 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.

- (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 automatically run according to the schedule you established.

Recover Data to Your ReadyNAS System

You can use Dashboard to create jobs to restore data that you previously backed up to another network-attached device to your ReadyNAS storage system.

Before you can recover data, you must first back it up. For more information about backing up data that you store on your ReadyNAS system, see [Back Up Data Stored On Your ReadyNAS System](#) on page 80.

The following figure illustrates the recovery process described in this section.

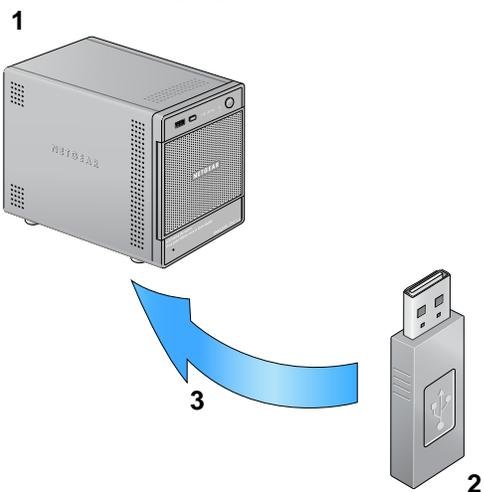


Figure 10. Restoring data from a USB drive to a ReadyNAS system

1. ReadyNAS system serving as recovery destination
2. USB drive serving as recovery source
3. Recovery process



WARNING!

Although this is a recovery procedure, your ReadyNAS system treats it like a backup job. This means that 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.

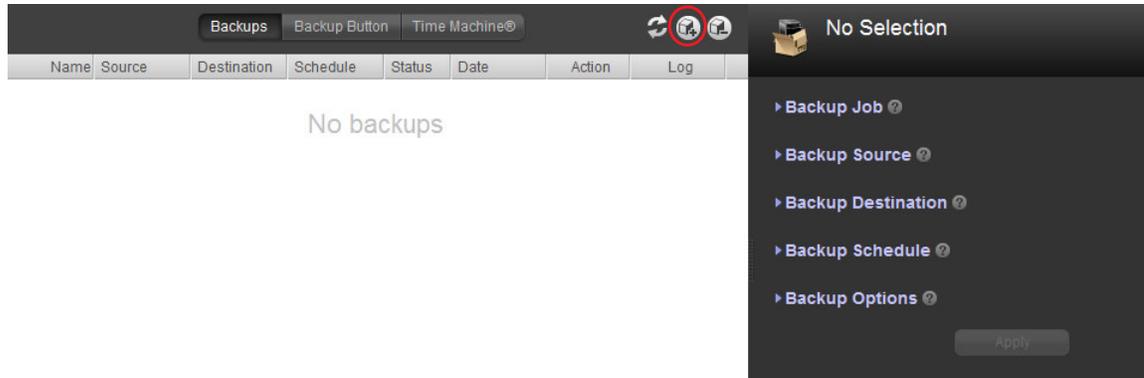
By default, all backup jobs are scheduled to automatically run every day. You can edit these settings after you create each backup job. For more information, see [Edit a Backup Job](#) on page 96.

Backup and recovery jobs using Time Machine require different procedures. For more information, see [Time Machine](#) on page 100.

➤ **To recover backup data to your ReadyNAS system:**

1. Select Configure > Backup.

The Backup screen displays.



2. Click the New Backup Job icon.

The New Backup Job dialog box displays.

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

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

4. From the Source drop-down list, select a recovery source that is not part of your ReadyNAS system.

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

5. From the Destination drop-down list, select a recovery destination on your ReadyNAS system.

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

6. Click the Create button.

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

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

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, or 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 list, select **Every Time**.
- b. From the On completion send drop-down list, select the type of logs to send when the recovery job finishes.

You can send a log that lists only errors encountered 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 98.

- 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 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.

The recovery process begins.

Back Up Data Stored on a Network-Attached Device

You can use Dashboard to create jobs to back up data that resides primarily on a network-attached device to your ReadyNAS device.

The following figure illustrates the backup process described in this section.

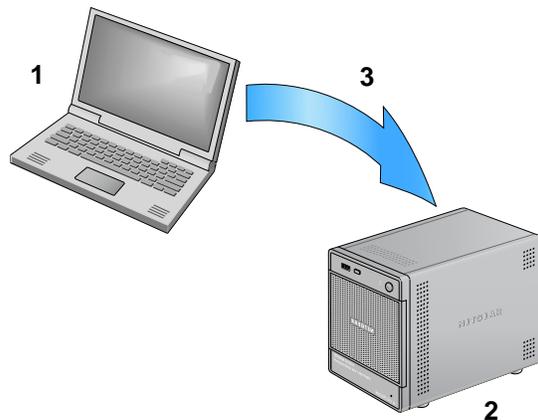


Figure 11. Backing up data from a laptop computer to a ReadyNAS system

1. Laptop computer serving as backup source
2. ReadyNAS system serving as backup destination
3. Backup process

By default, all backup jobs are scheduled to automatically run every day. You can edit these settings after you create each backup job. For more information, see [Edit a Backup Job](#) on page 96.

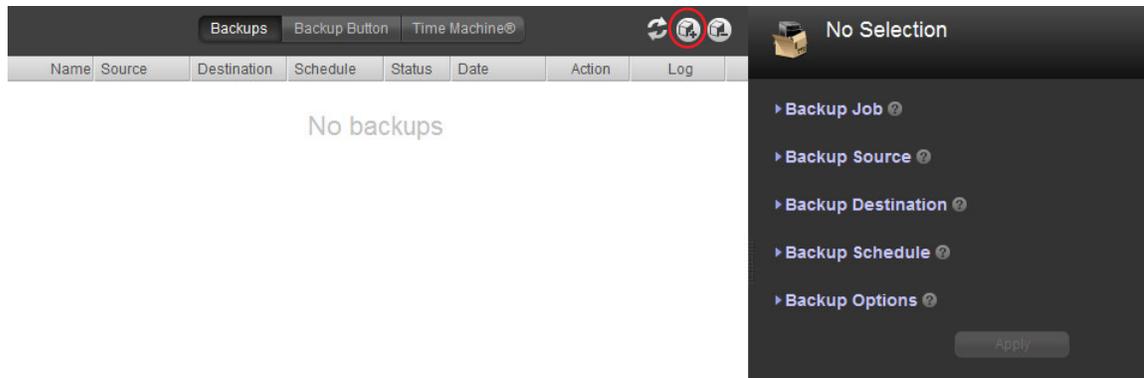
Before trusting your backup job to a schedule, it is a good practice to manually perform the backup to make sure that access to the remote backup source or destination is granted, and that the backup job can be done within the backup frequency you selected. You can do this after you create each backup job. For more information, see [Manually Start a Backup Job](#) on page 98.

Backup and recovery jobs using Time Machine require different procedures. For more information, see [Time Machine](#) on page 100.

➤ **To back up data stored on another network-attached device:**

1. Select **Configure > Backup**.

The Backup screen displays.



2. Click the **New Backup Job** icon.

The New Backup Job dialog box displays.

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

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

4. From the Source drop-down list, select a 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. From the Destination drop-down list, select a backup source from your ReadyNAS system.

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

- Click the **Create** button.

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

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

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, or enter a folder path to place the backed-up data in a specific folder.

- (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.

- (Optional) In the Backup Schedule section, adjust the new job's 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 98.

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

9. (Optional) In the Backup Options section, adjust option settings.
- From the Schedule full backup drop-down list, select how frequently you want a full backup to be run.
 - From the On completion send drop-down list, select what type of logs to send when the recovery job finishes.

You can send a log that lists only errors encountered 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 98.

- (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 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.

- (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.

Recover Data to a Network-Attached Device

You can use Dashboard to create jobs to restore data that you previously backed up to your ReadyNAS device to another network-attached device. Before you can recover data, you must first back it up.

The following figure illustrates this process.

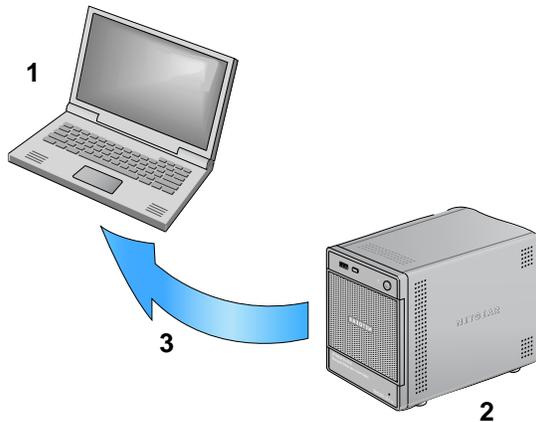


Figure 12. Recovering data from a ReadyNAS system to a laptop computer

1. Laptop computer serving as recovery destination
2. ReadyNAS system serving as recovery source
3. Recovery process



WARNING!

Although this is a recovery procedure, your ReadyNAS system treats it like a backup job. This means that 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.

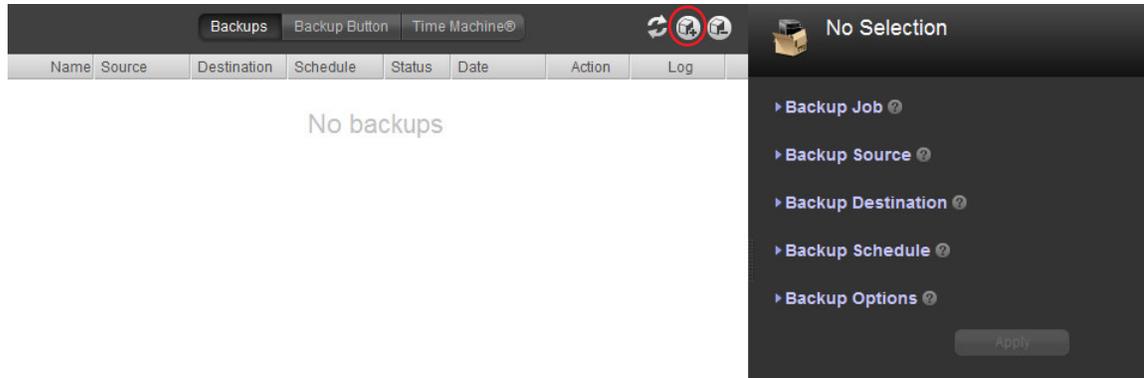
By default, all backup jobs are scheduled to automatically run every day. You can edit these settings after you create each backup job. For more information, see [Edit a Backup Job](#) on page 96.

Backup and recovery jobs using Time Machine require different procedures. For more information, see [Time Machine](#) on page 100.

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

1. Select **Configure > Backup.**

The Backup screen displays.



2. Click the **New Backup Job icon.**

The New Backup Job dialog box displays.

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

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

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

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

5. From the Destination drop-down list, 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.

6. Click the **Create button.**

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

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

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, or enter a folder path to place the backed-up data in a specific folder.

- (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.

- 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 list, select **Every Time**.
- b. From the On completion send drop-down list, select what type of logs to send when the recovery job finishes.

You can send a log that lists only errors encountered 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 98.

- 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 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.

The recovery process begins.

13. Click the **Go** button for this recovery job.

The recovery process begins.

Manage Backup Jobs

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

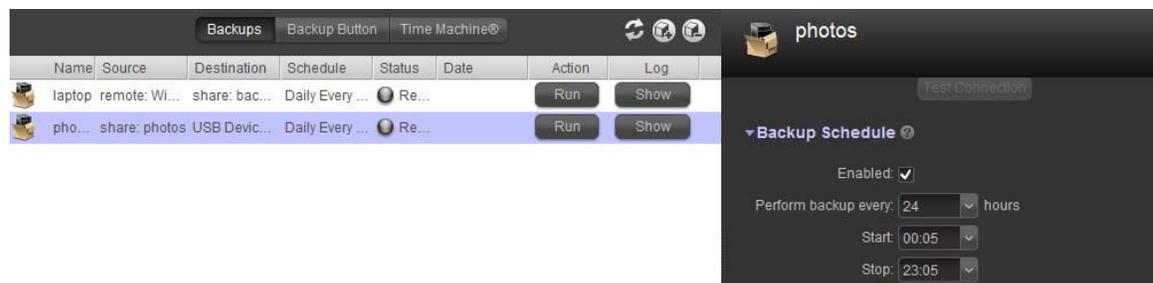
Edit a Backup Job

Use Dashboard to edit backup jobs that you created earlier.

➤ **To edit a backup job:**

1. Select **Configure > Backup**.

The Backup screen displays.



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 lists, 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.

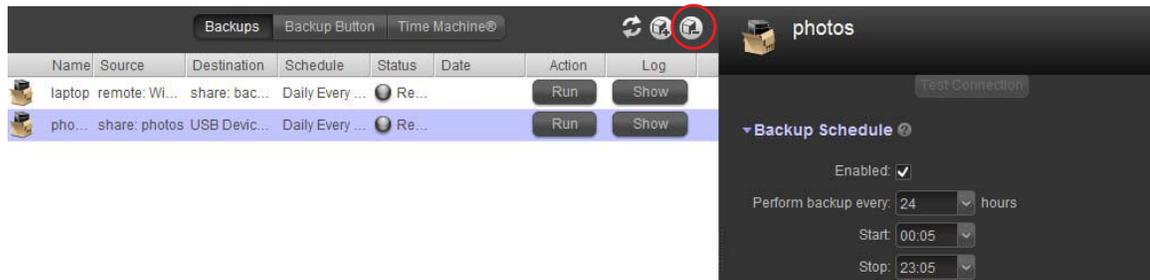
Delete a Backup Job

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

➤ **To delete a backup job:**

1. Select **Configure > Backup**.

The Backup screen displays.



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.

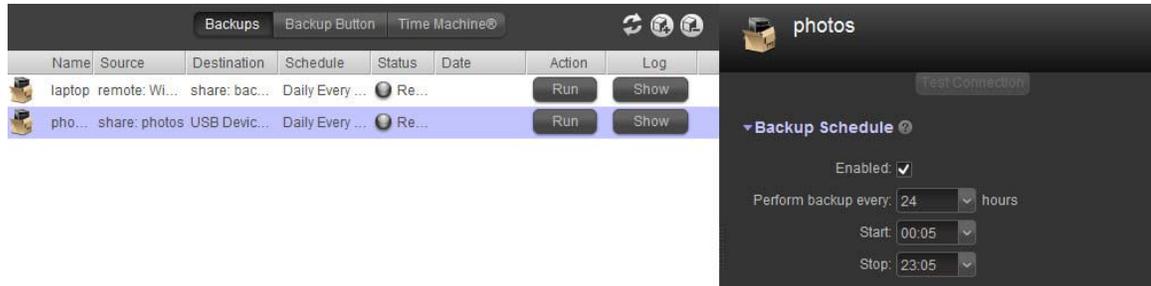
Manually Start a Backup Job

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

➤ **To manually start a backup job:**

1. Select **Configure > Backup.**

The Backup screen displays.



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

The backup job starts.

View a Backup Log

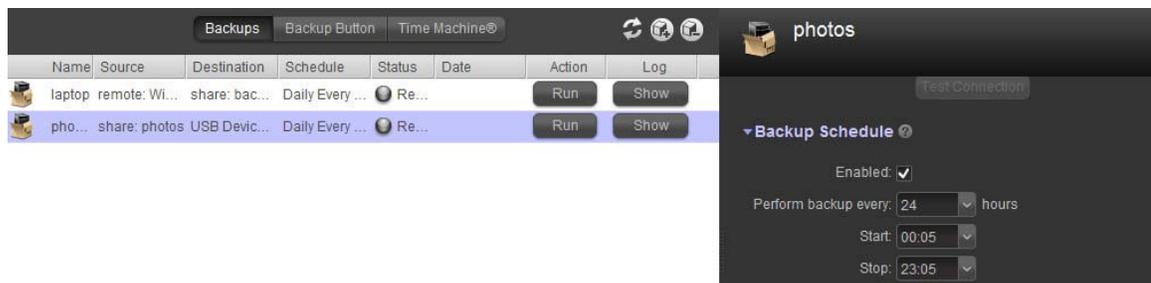
You can use Dashboard to view the full logs of completed backup jobs or the partial backup logs of jobs that are in progress.

In addition to backup logs, your ReadyNAS system also maintains system logs. For more information, see [System Logs](#) on page 71.

➤ **To view backup logs:**

1. Select **Configure > Backup.**

The Backup screen displays.



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. The Backup Button screen displays.

▼ Backup Sequence



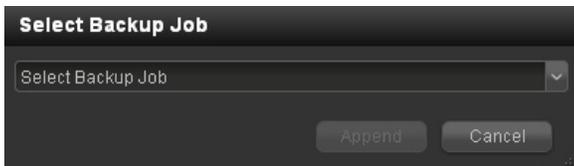
You can program the Backup button on the front of this device to execute one or more backup jobs that you defined in the Backups tab. When you press the Backup button, the jobs are executed in the order that you specify here. If no jobs are defined for the button, pushing the button backs up the contents of the backup share to the storage device connected to the front USB port. Please attach a USB hard drive directly to the front USB port before pressing the backup button.

Order	Name	Source	Destination	Schedule
No backups				

Append

3. (Optional) To add a backup job, follow these steps:
 - a. click the **Append** button and follow these steps:

The Select Backup Job dialog box displays.



Select Backup Job

Select Backup Job

Append Cancel

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

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

▼ Backup Sequence



You can program the Backup button on the front of this device to execute one or more backup jobs that you defined in the Backups tab. When you press the Backup button, the jobs are executed in the order that you specify here. If no jobs are defined for the button, pushing the button backs up the contents of the backup share to the storage device connected to the front USB port. Please attach a USB hard drive directly to the front USB port before pressing the backup button.

Order	Name	Source	Destination	Schedule
1	Dixie's share	home: Dixie	share: backup	Not scheduled

Append

4. (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.

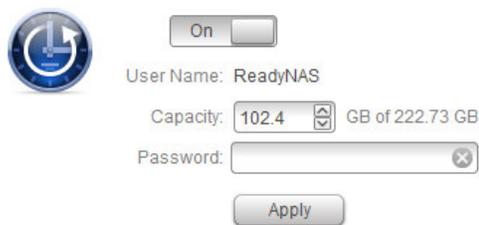
Time Machine

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**.

The Time Machine screen displays.

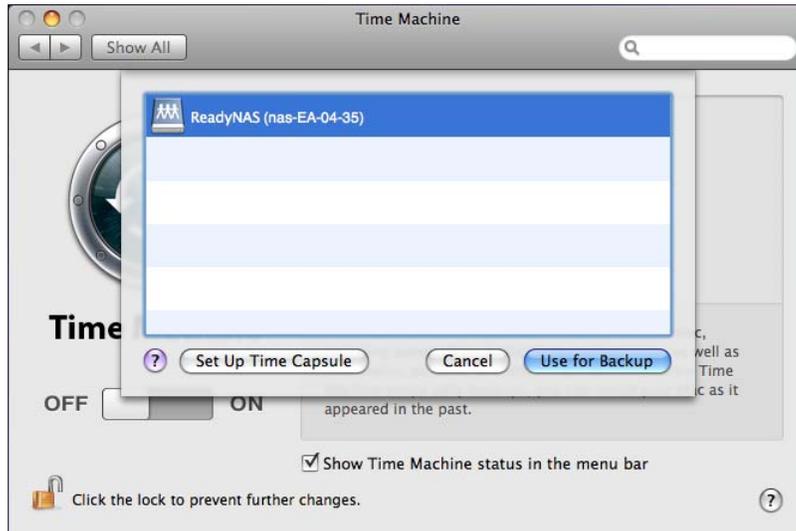


2. Move the slider to **On**.
3. In the Capacity field, enter the maximum amount of space on your ReadyNAS storage system that you want to devote to Time Machine backups.
If Time Machine backups exceed this quota, the ReadyNAS system deletes older versions of Time Machine backups to bring Time Machine backups within this quota.
4. Create a password and enter it in the Password field.
5. Click the **Apply** button.

Your settings are saved.

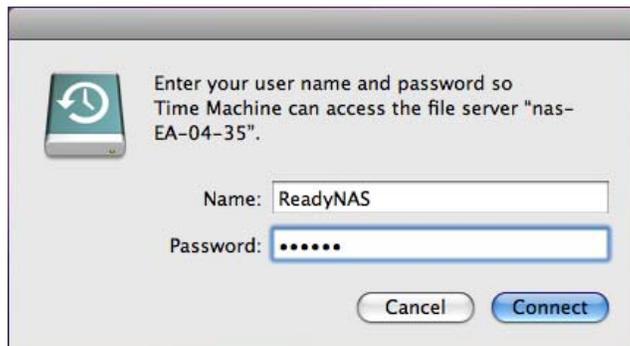
6. Launch Time Machine and click the **Choose Backup Disk** button.

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



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

A dialog box displays, prompting you to provide login credentials.



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. This can take several minutes.

Notification of Compliance

8

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

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