

NETGEAR®

ReadyNAS 3200 Hardware Manual



350 East Plumeria Drive
San Jose, CA 95134
USA

May 2010
202-10541-02
v1.0

© 2010 NETGEAR, Inc. All rights reserved.

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

Technical Support

When you register your product at <http://www.netgear.com/register>, we can provide you with faster expert technical support and timely notices of product and software upgrades.

NETGEAR, Inc.

350 East Plumeria Drive
San Jose, CA 95134 USA

E-mail: support@netgear.com

Website: <http://www.netgear.com>

Phone: 1-888-NETGEAR, for US & Canada only. For other countries, see your Support information card.

Trademarks

NETGEAR, the NETGEAR logo, ProSafe, Smart Wizard, and Auto Uplink are trademarks or registered trademarks of NETGEAR, Inc. Microsoft, Windows, Windows NT, and Vista are registered trademarks of Microsoft Corporation. Other brand and product names are registered trademarks or trademarks of their respective holders.

Statement of Conditions

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

Revision History

Publication Part Number	Version	Publish Date
202-10541-02	v1.0	May 2010

Table of Contents

Chapter 1 Getting Started

Control Panel, Status Displays, Ports, and Drive Bays	5
Front Panel	5
Disk Tray, Status Lights, Release, and Tray Handle	5
Rear Panel	6
Safety Warning	7
Rack Mount Setup and Considerations	8
Electrical Safety Precautions	9
General Safety Precautions	9
Electrostatic Discharge (ESD) Precautions	10
Rack Mount Precautions	11
Choosing a Setup Location	11
Preparing for Setup	11
Installing the System into a Rack	12
Initial Setup, IP Address, and Login Password	14

Chapter 2 Diagnostics and Maintenance

Control Panel Diagnostic and Status Information	16
Performing System Shutdown	18
Using the Power Button	18
Using the FrontView Browser User Interface	18
Understanding the System Diagnostics Boot Menu	19
Reinstalling the Firmware	21
Using the Boot Menu to Format a RAID Volume	22
Adding or Replacing Disks	25
Adding a New Disk	25
Failed Disk Notification	26
Choosing a Replacement Disk	26
Replacing a Failed Disk	27
Replacing System Components	28
Accessing the Inside of the System	28
Replacing a System Fan	29
Replacing a Power Supply	30
Replacing the Onboard Battery	30

Appendix A Default Settings and Specifications

Factory Default Settings	32
Technical Specifications	33

Appendix B Notification of Compliance

Index

Getting Started

ReadyNAS 3200

1

This chapter provides an overview of the unit's physical features.

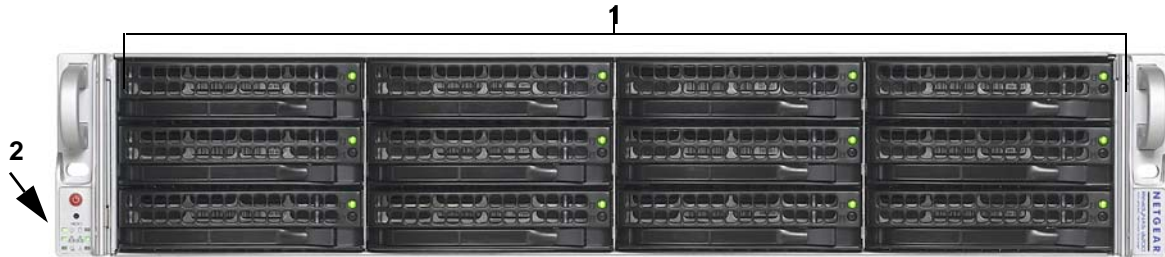
Topics discussed in this chapter include:

- Control Panel, Status Displays, Ports, and Drive Bays
- Safety Warning
- Rack Mount Setup and Considerations
- Initial Setup, IP Address, and Login Password

Control Panel, Status Displays, Ports, and Drive Bays

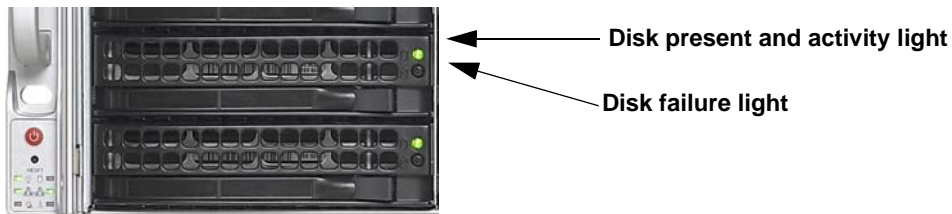
This section introduces the ReadyNAS control panel, status display, ports, and drive bays.

Front Panel



1. Twelve drive bays with hot pluggable disk trays that each include two status lights
2. Control panel with status lights
 - Power and reset buttons
 - Power, LAN, disk, and fan status lights

Disk Tray, Status Lights, Release, and Tray Handle



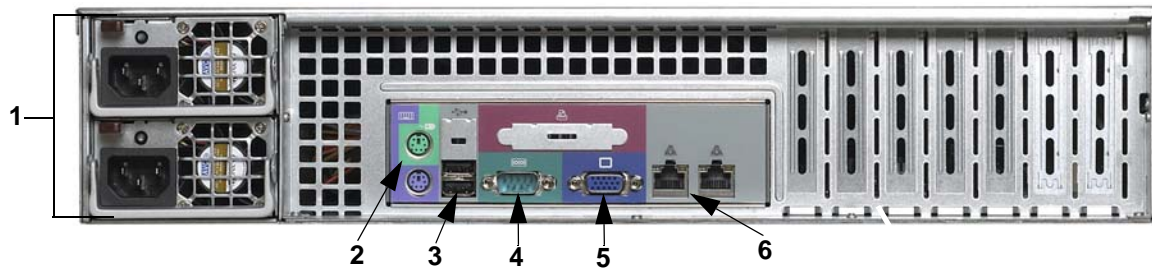
The disk tray features a push switch activated pop-out tray handle.



WARNING!

Regardless of how many hard drives are installed, all drive trays must remain in the drive bays to maintain proper airflow.

Rear Panel



1. Dual power supplies
2. PS2 keyboard and mouse ports
3. Two USB ports
4. RS232 console port
5. GA monitor port
6. Two gigabit Ethernet ports with failover and link aggregation

Safety Warning

1. The equipment contains no operator access areas and is certified only for installation, by trained personnel only, according to the installation instructions provided with each unit.
2. The socket outlet shall be installed near the equipment and shall be easily accessible.
3. Observe the onboard battery precautions. Follow the battery replacement instructions at [“Replacing the Onboard Battery”](#) on page 30.



DANGER:

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THEIR INSTRUCTIONS.

4. The units and their associated LAN connections shall be interconnected only with equipment within the same building.
5. Slide or rail-mounted equipment is not to be used as a shelf or a work space.



Rack Mount Setup and Considerations

Use the included rack mount hardware to install the unit according to the following instructions.



DANGER:

A unit with installed drives can weigh more than 80 pounds. So as to avoid injury or damage to the equipment, plan to perform the rack mount installation with appropriate assistance.

Ambient Operating Temperature

If the unit installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment might be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum rated ambient temperature found in [Appendix A, "Default Settings and Specifications"](#).

Reduced Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Consider equipment nameplate ratings when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (for example, the use of power strips).

Electrical Safety Precautions

Follow basic electrical safety precautions to protect yourself from harm and the ReadyNAS 3200 from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch, or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high voltage components.
- Disconnect power from the system when removing or installing main system components, such as the main board or memory modules. When disconnecting power, you should first power down the system with the operating system and then unplug the power cords of all the power supply units in the system.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease static electrical discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply cords must include a grounding plug and must be plugged into grounded electrical outlets.

General Safety Precautions

- Keep the area around the ReadyNAS 3200 clean and free of clutter.
- The ReadyNAS 3200 weighs approximately 82 pounds when fully loaded. When lifting the system, two people at either end should lift slowly with their feet spread out to distribute the weight. Always keep your back straight and lift with your legs.
- Place the chassis top cover and any system components that have been removed away from the system or on a table so that they will not accidentally be stepped on.
- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.
- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.

- Onboard battery: This battery must be replaced only with the same or an equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

**DANGER:**

There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities.

- Main board replaceable soldered-in fuses: Self-resetting PTC (positive temperature coefficient) fuses on the main board must be replaced by trained service technicians only. The new fuse must be the same as, or equivalent to the one replaced. Contact technical support for details and support.

Electrostatic Discharge (ESD) Precautions

Electrostatic discharge is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:



- Use a grounded wrist strap designed to prevent static discharge.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.
- Touch a grounded metal object before removing the board from the antistatic bag.
- Do not let components or PCBs come into contact with your clothing, which might retain a charge even if you are wearing a wrist strap.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules, or contacts.
- When handling chips or modules, avoid touching their pins.
- Put the main board and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners, and the main board.
- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws after ensuring that all connections have been made.

Rack Mount Precautions

Follow these rack mount precautions:

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- In single-rack installation, stabilizers should be attached to the rack. In multiple-rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a component from the rack.
- You should extend only one component at a time-extending two or more simultaneously might cause the rack to become unstable.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest components on the bottom of the rack first, and then work up.
- Use a regulating uninterruptible power supply (UPS) to protect the ReadyNAS 3200 from power surges, and voltage spikes and to keep your system operating in case of a power failure.
- Allow any hot-plug drives and power supply modules to cool before touching them.
- Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.

Choosing a Setup Location

Note: This product is intended for installation in a restricted access location (dedicated equipment rooms, service closets, and the like) only.

Leave enough clearance in front of the rack to enable you to open the front door completely (about 25 inches) and approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

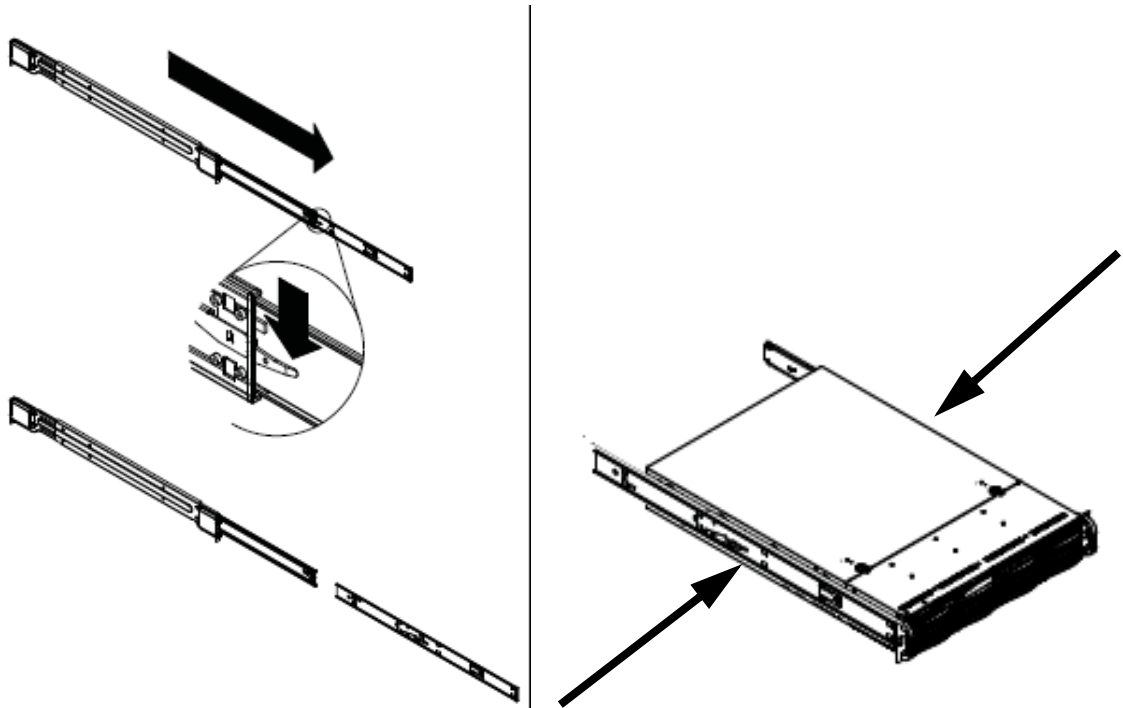
Preparing for Setup

Read these instructions in their entirety before you begin. Locate the ReadyNAS 3200 shipping carton, remove the rack mounting kit, and prepare to work with it.

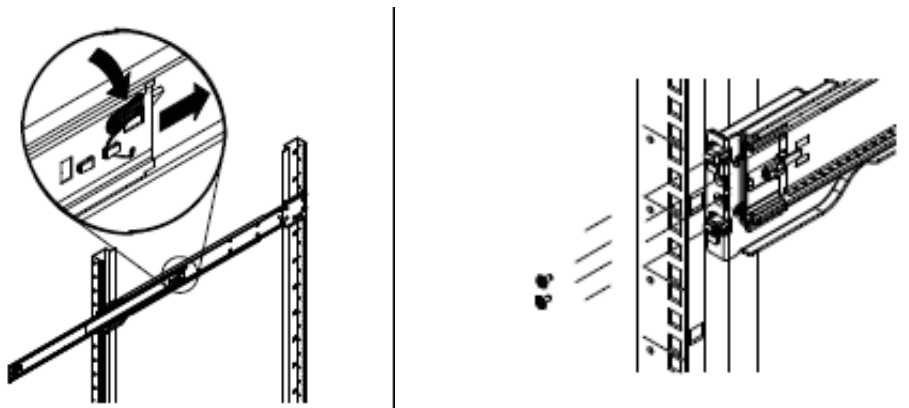
Installing the System into a Rack

Follow these instructions for installing the system into a rack.

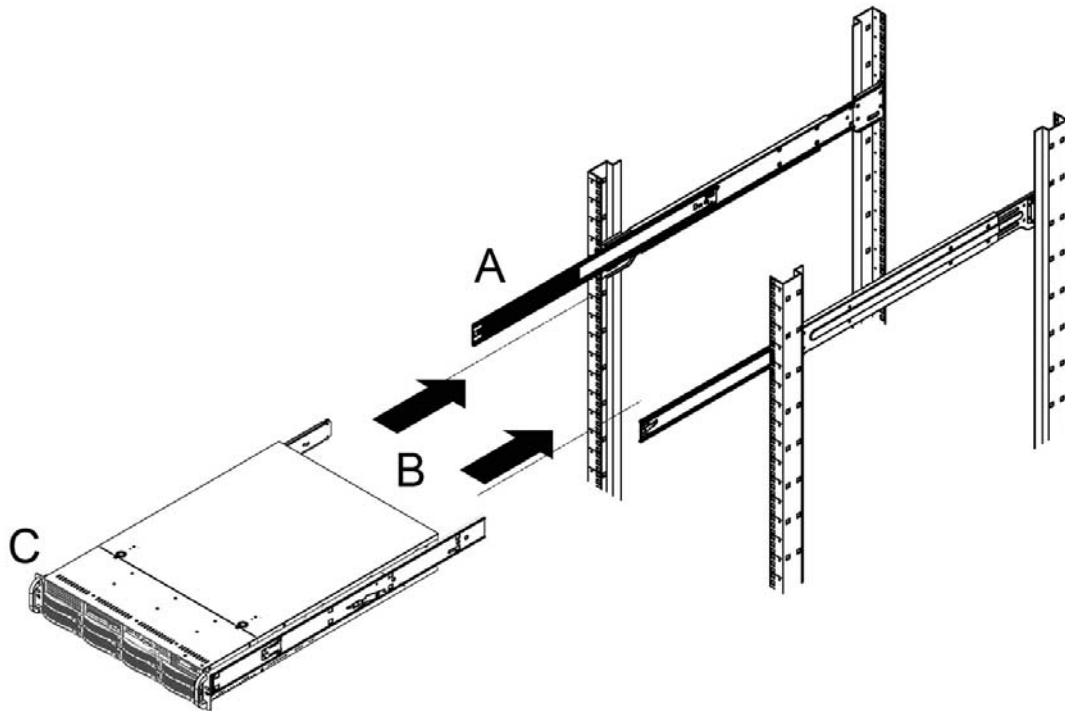
1. The rack mounting kit contains two rail assemblies. Each assembly consists of two sections: an inner fixed chassis rail that secures directly to the ReadyNAS 3200 chassis and an outer fixed rack rail that secures directly to the rack itself. Extend the rail assembly by pulling it outward. Press the release tab and separate the inner rail from the outer assembly.



2. Use the provided mounting screws to mount the inner rails to the system chassis.
3. Fasten the backs of the outer rails to the rack with screws. Press the release to extend the rails. Hang the hooks of the rails into the rack holes, and fasten the rails to the rack.



4. Extend the ball shuttle (A) to the very front. Align the rails (B) and push the chassis in. Secure the handles to the outer rails (C) with screws. The rack mount installation is complete.



Initial Setup, IP Address, and Login Password

Follow the instructions in the *ReadyNAS Installation Guide* that came with your unit to install it. An electronic copy of the installation guide is on the product CD, on the NETGEAR website, and on <http://readynas.com>.

Estimated time to complete setup is 20 minutes.

The default IP configuration is set to DHCP; if the unit does not get an IP address, it defaults to 192.168.168.168.

The default administrator user name is **admin**

The default password being **netgear1**

Both user name and password are case sensitive.

Note: The RAIDar utility can discover any ReadyNAS on the network without using its IP address.

For information about using ReadyNAS 3200 RAIDar and FrontView software to log in, configure, and manage your system, see the *ReadyNAS for Business Software Manual*.

2 Diagnostics and Maintenance

2





This chapter includes topics on system status, system shutdown, using the diagnostics menu, and adding, replacing, or formatting disks.







- [Control Panel Diagnostic and Status Information](#)
- [Performing System Shutdown](#)
- [Understanding the System Diagnostics Boot Menu](#)
- [Reinstalling the Firmware](#)
- [Using the Boot Menu to Format a RAID Volume](#)
- [Adding or Replacing Disks](#)
- [Replacing System Components](#)

Control Panel Diagnostic and Status Information



The function of each control panel item is described in the following table:

Item	Activity	Description
Power Switch 	Push button	Push to turn on the ReadyNAS 3200. The power LED blinks while the ReadyNAS 3200 is booting. Preferred shutdown: If the unit is running, pressing the Power switch once will begin the graceful shutdown blink pattern on the LEDs. Pressing the Power button a second time confirms and initiates the graceful shutdown. Forced shutdown: If the unit is hung, you can press and hold the Power button for 5 seconds to force shutdown.
System Reset 	Push button	Reset: Use a stick pin or paper clip to press the Reset button once to do a warm boot of the ReadyNAS 3200. Diagnostics: To enter the diagnostic boot menu, see “Understanding the System Diagnostics Boot Menu” on page 19.
Power LED 	On (Green) Off	On green: The unit is powered on. Off: The unit is powered off.
Disk LED 	On/Blink (Amber)	On/blink amber: disk activity.

Item	Activity	Description
<p>LAN LEDs</p> 	<p>On (Green) Blink (Green) Off</p>	<p>On green: LAN cable connected. Blink green: LAN activity. Off: LAN cable disconnected.</p>
<p>Power diagnostic LED</p> 	<p>On (Red) Off</p>	<p>On red: Power failure. Off: Normal operation.</p>
<p>Fan LED</p> 	<p>On (Red) Off</p>	<p>On red: Overheating or fan failure. Off: Normal operation.</p>
<p>Upper disk tray LED: disk presence</p> 	<p>On (Green) Blink (Green) Off</p>	<p>On: Disk installed. Blink: Volume activity. Off: No disk installed, or no volume present.</p>
<p>Lower disk tray LED: disk failure</p> 	<p>On (Amber) Off</p>	<p>On: Disk failed. Off: If a disk is installed, the disk operation is normal.</p>
<p>Rear panel Ethernet ports</p> 	<p>On (Green) On (Amber) Off</p>	<p>The LAN port is operating at 1,000 Mbps. The LAN port is operating at 100 Mbps. The LAN port is operating at 10 Mbps.</p>

Performing System Shutdown

You can shut down the unit using the Power button, or from the FrontView browser user interface.

Using the Power Button

There are two ways to shut down the unit using the power switch.


- **Preferred shutdown:** Pressing the power button twice initiate a graceful shutdown.
- **Forced shutdown:** If the unit is hung, hold the power button for 5 seconds to force shutdown.

Using the FrontView Browser User Interface

The **FrontView > Shutdown Options** screen offers the option to power off or reboot the ReadyNAS 3200. You also have the option of performing a full file system check or a quota check on the next boot.

Understanding the System Diagnostics Boot Menu

This section introduces the system diagnostics boot menu.

Control Panel	Selecting Boot Menu Options																																																																																										
 <p data-bbox="240 787 316 861">Red Power LED</p> <p data-bbox="365 787 422 861">Red Fan LED</p>	<p>To select a boot menu option:</p> <ol style="list-style-type: none"> 1. Enable the boot menu by using a paper clip to hold in the Reset button while powering the unit on. Keep pressing Reset for up to 1 minute until both the red LEDs at the bottom are lit. 2. Press the Reset button within 2 seconds to step through the Boot Menu options. The system presents the blink pattern of the selected boot menu option, and holds the display of the final LEDs in the pattern (either off on, or on on), and waits for you to confirm the selection. 3. Press and hold the Reset button for 3 seconds to confirm the selection. The system confirms the selection by blinking both LEDs twice, then proceeds. 																																																																																										
	<table border="1"> <thead> <tr> <th data-bbox="440 871 704 905">Boot Menu Sequence</th> <th colspan="8" data-bbox="760 871 1360 905">Red Power LED and Red Fan LED Blink Patterns</th> </tr> </thead> <tbody> <tr> <td data-bbox="440 919 704 982">LED Legend:</td> <td data-bbox="760 919 836 982">■ ■ Off Off</td> <td data-bbox="836 919 912 982">■ ■ On On</td> <td data-bbox="912 919 989 982">■ ■ Off On</td> <td data-bbox="989 919 1065 982"></td> <td data-bbox="1065 919 1141 982"></td> <td data-bbox="1141 919 1218 982"></td> <td data-bbox="1218 919 1294 982"></td> <td data-bbox="1294 919 1370 982"></td> </tr> <tr> <td data-bbox="440 993 704 1026">Boot Menu Enabled</td> <td data-bbox="760 993 836 1026">■ ■</td> <td data-bbox="836 993 912 1026"></td> <td data-bbox="912 993 989 1026"></td> <td data-bbox="989 993 1065 1026"></td> <td data-bbox="1065 993 1141 1026"></td> <td data-bbox="1141 993 1218 1026"></td> <td data-bbox="1218 993 1294 1026"></td> <td data-bbox="1294 993 1370 1026"></td> </tr> <tr> <td data-bbox="440 1037 704 1071">1. Normal Boot</td> <td data-bbox="760 1037 836 1071">■ ■</td> <td data-bbox="836 1037 912 1071">■ ■</td> <td data-bbox="912 1037 989 1071"></td> <td data-bbox="989 1037 1065 1071"></td> <td data-bbox="1065 1037 1141 1071"></td> <td data-bbox="1141 1037 1218 1071"></td> <td data-bbox="1218 1037 1294 1071"></td> <td data-bbox="1294 1037 1370 1071"></td> </tr> <tr> <td data-bbox="440 1081 704 1115">2. Factory Default</td> <td data-bbox="760 1081 836 1115">■ ■</td> <td data-bbox="836 1081 912 1115">■ ■</td> <td data-bbox="912 1081 989 1115"></td> <td data-bbox="989 1081 1065 1115"></td> <td data-bbox="1065 1081 1141 1115"></td> <td data-bbox="1141 1081 1218 1115"></td> <td data-bbox="1218 1081 1294 1115"></td> <td data-bbox="1294 1081 1370 1115"></td> </tr> <tr> <td data-bbox="440 1125 704 1159">3. OS Reinstall</td> <td data-bbox="760 1125 836 1159">■ ■</td> <td data-bbox="836 1125 912 1159">■ ■</td> <td data-bbox="912 1125 989 1159">■ ■</td> <td data-bbox="989 1125 1065 1159">■ ■</td> <td data-bbox="1065 1125 1141 1159">■ ■</td> <td data-bbox="1141 1125 1218 1159"></td> <td data-bbox="1218 1125 1294 1159"></td> <td data-bbox="1294 1125 1370 1159"></td> </tr> <tr> <td data-bbox="440 1169 704 1203">4. Tech Support</td> <td data-bbox="760 1169 836 1203">■ ■</td> <td data-bbox="836 1169 912 1203">■ ■</td> <td data-bbox="912 1169 989 1203">■ ■</td> <td data-bbox="989 1169 1065 1203">■ ■</td> <td data-bbox="1065 1169 1141 1203">■ ■</td> <td data-bbox="1141 1169 1218 1203"></td> <td data-bbox="1218 1169 1294 1203"></td> <td data-bbox="1294 1169 1370 1203"></td> </tr> <tr> <td data-bbox="440 1213 704 1247">5. Skip Volume Check</td> <td data-bbox="760 1213 836 1247">■ ■</td> <td data-bbox="836 1213 912 1247">■ ■</td> <td data-bbox="912 1213 989 1247">■ ■</td> <td data-bbox="989 1213 1065 1247">■ ■</td> <td data-bbox="1065 1213 1141 1247">■ ■</td> <td data-bbox="1141 1213 1218 1247">■ ■</td> <td data-bbox="1218 1213 1294 1247">■ ■</td> <td data-bbox="1294 1213 1370 1247"></td> </tr> <tr> <td data-bbox="440 1257 704 1291">6. Memory Test</td> <td data-bbox="760 1257 836 1291">■ ■</td> <td data-bbox="836 1257 912 1291">■ ■</td> <td data-bbox="912 1257 989 1291">■ ■</td> <td data-bbox="989 1257 1065 1291">■ ■</td> <td data-bbox="1065 1257 1141 1291">■ ■</td> <td data-bbox="1141 1257 1218 1291">■ ■</td> <td data-bbox="1218 1257 1294 1291">■ ■</td> <td data-bbox="1294 1257 1370 1291"></td> </tr> <tr> <td data-bbox="440 1302 704 1335">7. Factory Test</td> <td data-bbox="760 1302 836 1335">■ ■</td> <td data-bbox="836 1302 912 1335">■ ■</td> <td data-bbox="912 1302 989 1335">■ ■</td> <td data-bbox="989 1302 1065 1335">■ ■</td> <td data-bbox="1065 1302 1141 1335">■ ■</td> <td data-bbox="1141 1302 1218 1335">■ ■</td> <td data-bbox="1218 1302 1294 1335">■ ■</td> <td data-bbox="1294 1302 1370 1335">■ ■</td> </tr> </tbody> </table>	Boot Menu Sequence	Red Power LED and Red Fan LED Blink Patterns								LED Legend:	■ ■ Off Off	■ ■ On On	■ ■ Off On						Boot Menu Enabled	■ ■								1. Normal Boot	■ ■	■ ■							2. Factory Default	■ ■	■ ■							3. OS Reinstall	■ ■	■ ■	■ ■	■ ■	■ ■				4. Tech Support	■ ■	■ ■	■ ■	■ ■	■ ■				5. Skip Volume Check	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■		6. Memory Test	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■		7. Factory Test	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
Boot Menu Sequence	Red Power LED and Red Fan LED Blink Patterns																																																																																										
LED Legend:	■ ■ Off Off	■ ■ On On	■ ■ Off On																																																																																								
Boot Menu Enabled	■ ■																																																																																										
1. Normal Boot	■ ■	■ ■																																																																																									
2. Factory Default	■ ■	■ ■																																																																																									
3. OS Reinstall	■ ■	■ ■	■ ■	■ ■	■ ■																																																																																						
4. Tech Support	■ ■	■ ■	■ ■	■ ■	■ ■																																																																																						
5. Skip Volume Check	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■																																																																																				
6. Memory Test	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■																																																																																				
7. Factory Test	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■																																																																																			

1. **Boot Menu Enabled:** Use the **Reset** button to scroll through the menu to select an option within 3 seconds. After 3 seconds the boot menu defaults to Normal Boot.
2. **Normal Boot:** Perform a normal boot.
3. **Factory Default:** Reset the ReadyNAS back to its Factory Default state, erasing all data on the disks. This option can be used to change between X-RAID2 and Flex-RAID mode.



WARNING!

This process reinstalls the firmware and resets all disk configurations, and wipes out any and all data you might have on the unit.

- 4. OS Reinstall:** While keeping the data volume in tact, re-install the RAIDiator firmware on the ReadyNAS, reset the admin password, and change the DHCP assignment to DHCP client. This is helpful if you have lost your admin password and want to set it back to the default, if errors in your network settings have made it impossible to connect to the ReadyNAS, or if you suspect that the operating system on your disk may somehow be corrupt.


Tip: If possible, backup your configuration so that if you have to reset the unit to its factory default settings, you can simply restore all your settings from the configuration backup. For instructions on how to back up your configuration, see the *ReadyNAS for Business Software Manual*.

- 5. Tech Support:** Enable the remote diagnostic function.
- 6. Skip Volume Check:** Boot the system but bypass the volume check.
- 7. Memory Test:** Perform a memory diagnostic.

Reinstalling the Firmware

To reinstall the RAIDiator firmware on the ReadyNAS without touching the data volume, follow these steps.

1. While using a paper clip or push pin to gently press in the **Reset** button, power on the unit. Wait for the two red boot menu status lights on the front to display, then release the **Reset** button.

Control Panel	Boot Menu Options									
 <p>Red Power LED</p> <p>Red Fan LED</p>	Boot Menu Sequence	Red Power LED and Red Fan LED Blink Patterns								
	LED Legend:	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
		Off Off	On On	Off On						
	Boot Menu Enabled	■ ■								
	1. Normal Boot	■ ■	■ ■							
	2. Factory Default									
	3. OS Reinstall	■ ■	■ ■	■ ■	■ ■	■ ■				
	4. Tech Support									
5. Skip Volume Check										
6. Memory Test										
7. Factory Test										

2. Push the **Reset** button on the front panel three times to select the **OS Reinstall** option.



WARNING!

If you mistakenly select the **Factory Default** option, all data on the unit will be deleted. If you are unsure, let the system boot normally, before attempting this procedure again.

The system does the following:

- a. Displays the OS Reinstall blink pattern.
 - b. Holds the final LED displays (off on), and waits for you to confirm the selection.
3. Press the and hold the **Reset** button for 3 seconds to confirm the menu selection and proceed with that option. The system does the following:
 - a. Blinks both LEDs twice to confirm the selection.
 - b. Proceeds with reinstalling the firmware.
 - c. Reboots when the firmware reinstall is complete.

The data will be in tact. The user name, password, and system configuration settings will be the factory default values.

Using the Boot Menu to Format a RAID Volume



WARNING!

Using the Factory Default boot menu option will erase all the data on the hard disks. Do a full backup before using the Factory Default option.

You can switch between the Expandable Volume (X-RAID2) mode and the Flexible Volume Flex-RAID 0/1/5/6) mode only if you want to change the default configuration. For a brief overview of X-RAID2, see the *ReadyNAS for Business Software Manual*. An overview of RAID can be found on Wikipedia at <http://en.wikipedia.org/wiki/RAID>.

To reconfigure your RAID setup:

1. Power off the ReadyNAS.
2. Use a paper clip or push pin to gently press in the **Reset** button, power on the unit, wait for the boot menu on the front to display, then release the **Reset** button.

Control Panel	Boot Menu Options								
	Boot Menu Sequence		Red Power LED and Red Fan LED Blink Patterns						
	LED Legend:		■ ■ Off Off	■ ■ On On	■ ■ Off On				
	Boot Menu Enabled		■ ■						
	1. Normal Boot		■ ■	■ ■					
2. Factory Default		■ ■	■ ■						
3. OS Reinstall									

3. Push the **Reset** button on the front panel two times to select the **Factory Default** option.
The system does the following:
 - a. Displays the Factory Default blink pattern.
 - b. Holds the final LED display in the pattern (on on), and waits for you to confirm the selection.

4. Press and hold the **Reset** button for 3 seconds to confirm the menu selection and proceed with that option.

The system does the following:

- a. Blink both LEDs twice to confirm the selection.
- b. Proceed with clearing the disks.
- c. Power down.

5. Power on the system.

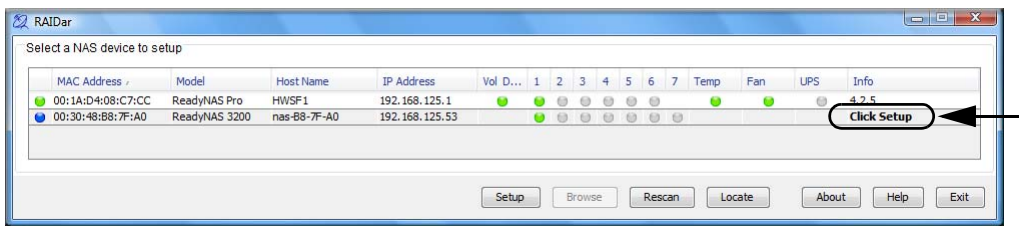
The system does the following:

- a. Reboots.
- b. Performs disk diagnostics.

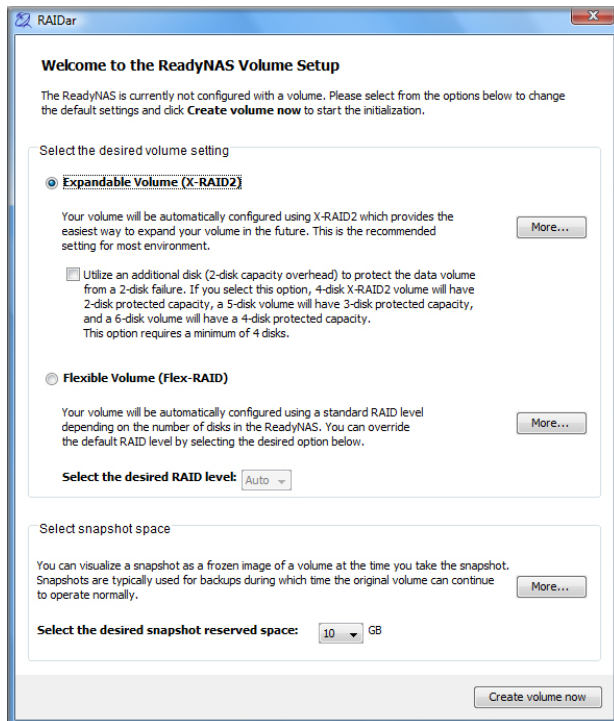
The disks now need to be formatted.

6. Run the RAIDar utility.

RAIDar prompts you to click **Setup**.



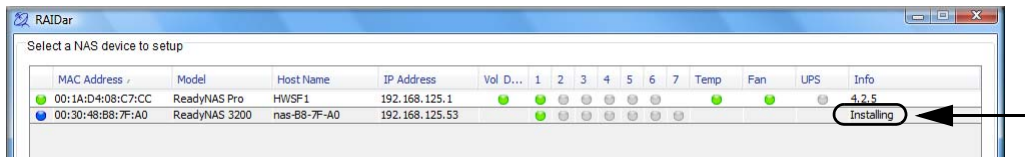
7. Click **Setup** to display the ReadyNAS Volume Setup screen.



8. Select either the **Expandable Volume (X-RAID2)** or the **Flexible Volume (Flex-RAID)** radio button, configure the options accordingly, and click **Create Volume Now**. The volume and initialization process begins.

Note: If no action is taken within 10 minutes, the system defaults to X-RAID2 with 10 GB reserved for snapshots.

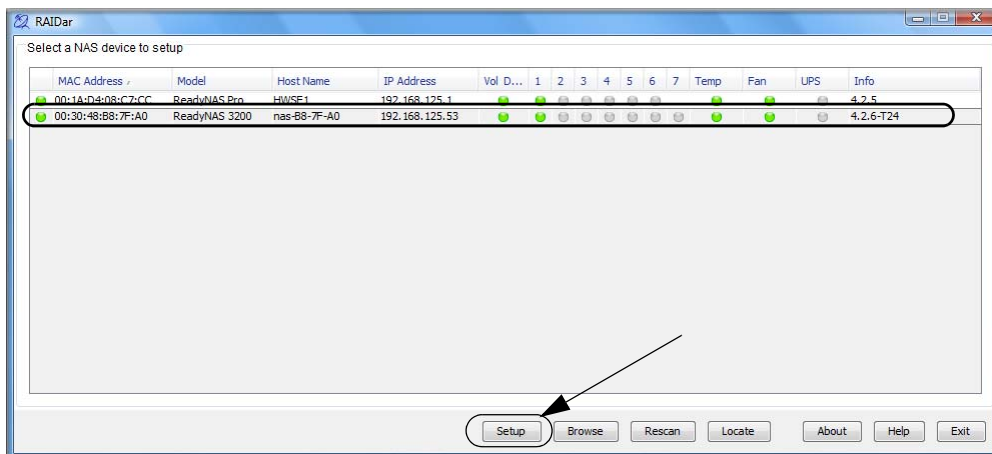
RAIDar shows that the system is initializing the volume. The system powers down when the volume initialization completes.



9. Power the system on. It performs diagnostics while it boots.
10. Click **Rescan** in RAIDar to connect to the system.
RAIDar finds the system and shows that it is booting.



11. When RAIDar shows that the system is ready, select the system from the list, and click **Setup** to log in to FrontView and configure the system.



Adding or Replacing Disks

Adding and replacing failed disks are similar processes. In the case of a failed disk, the unit gives you email alerts and status messages about the need to replace the disk.

Note: Be sure to check the Hardware Compatibility list on the NETGEAR Support site for a list of disks that have been qualified for the ReadyNAS 3200 to assure that you use a suitable disk.



WARNING!

Regardless of how many hard drives are installed, all drive trays must remain in the drive bays to maintain proper airflow.

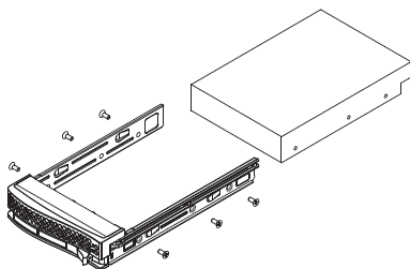
Adding a New Disk

To add a new disk:

1. Pull the disk tray release pull switch. The tray handle pops out.



2. Pull out the disk tray, and replace the failed disk.



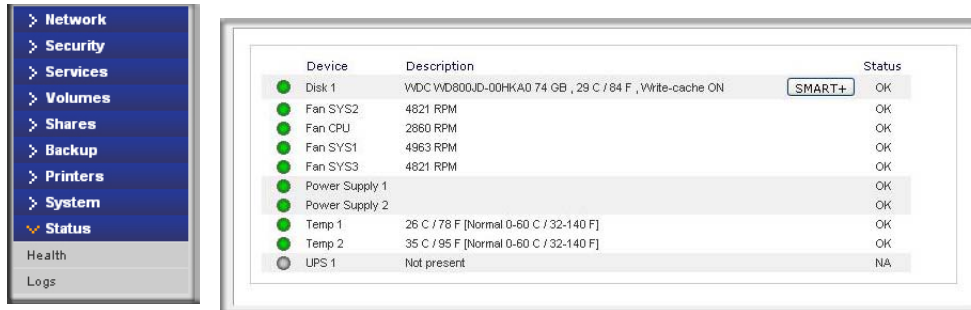
Make sure that the hard disk connectors face the interior of the disk bay when you reassemble the disk.

3. Slide the disk tray back into the ReadyNAS and secure the handle.

The volume automatically synchronizes with the new disk in the background, taking several hours depending on the disk size. The ReadyNAS can continue to be used, although access will be slower until the volume synchronization finishes. You are notified by e-mail when the process is complete.

Failed Disk Notification

When a disk fails in your ReadyNAS, you are notified of the failure by e-mail. The FrontView **Health** screen provides information about the failed disk.



The disk tray of the ReadyNAS 3200 includes a failed disk LED that turns amber when its disk fails.

Choosing a Replacement Disk

On the FrontView main menu, select Status > Health. Take note of the disk vendor and model used in your ReadyNAS. It is best to replace a failed disk with the same disk model. Contact the disk vendor, and arrange to have the disk replaced if the disk is still under warranty. A disk RMA from the vendor requires that you provide the serial number of the disk. To locate the serial number, open the disk tray and take out the failed disk. If the disk is no longer under warranty, you can obtain a disk of the same capacity or larger from your ReadyNAS retailer.

Replacing a Failed Disk

ReadyNAS supports hot-swap bays, so there is no need to power it down when a disk fails.

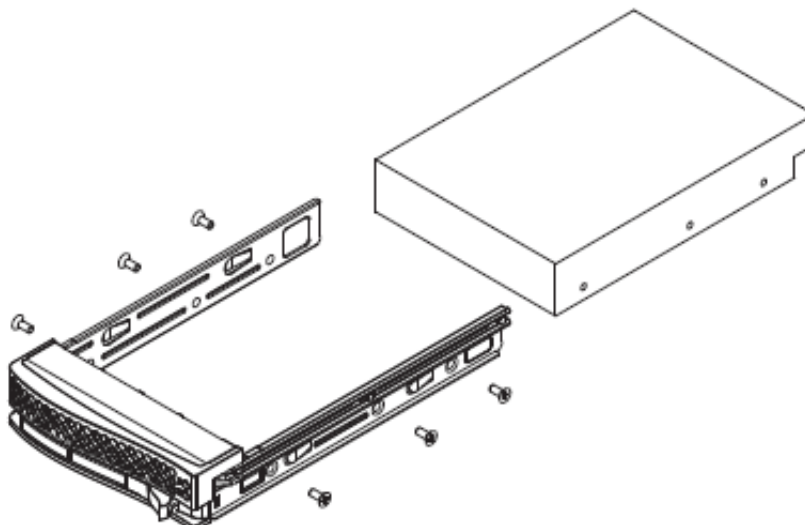
To replace the failed disk:

1. View the disk tray failed disk LED to identify which disk has failed.
2. Pull the disk tray release pull switch. The disk tray handle pops out.



3. Pull out the disk tray, and replace the failed disk.

Make sure that the hard disk connectors face the interior of the disk bay when you reassemble the disk.



4. Slide the disk tray back into the ReadyNAS and secure the handle.

The volume automatically synchronizes with the new disk in the background. The process takes several hours depending on the disk size. During this process, the ReadyNAS can be used, although access will be slower until the volume finishes synchronizing. You are notified by e-mail when the process is complete.

Replacing System Components

You can replace failed components such as power supplies, fans, and the system battery. This section explains how to replace failed components.

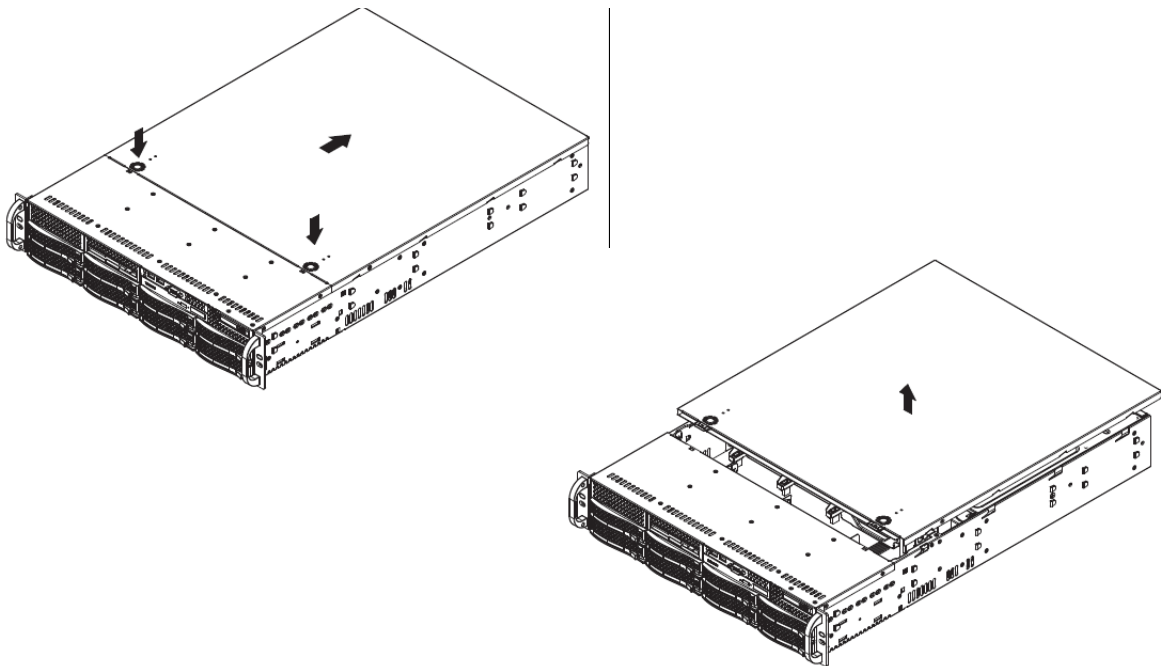
Accessing the Inside of the System

You might need to access the inside of the system to replace failed components.

To access the inside of the system:

1. Grasp the two handles on either side and pull the unit straight out until it locks; you will hear a “click”.
2. Press the two buttons on the top of the chassis to release the top cover.

You can then lift the top cover from the chassis to gain full access to the inside of the system.



WARNING!

Care must be taken to assure that the chassis cover is in place when the system is operating to ensure proper cooling. Out-of-warranty damage to the system can occur if this practice is not strictly followed.

Replacing a System Fan

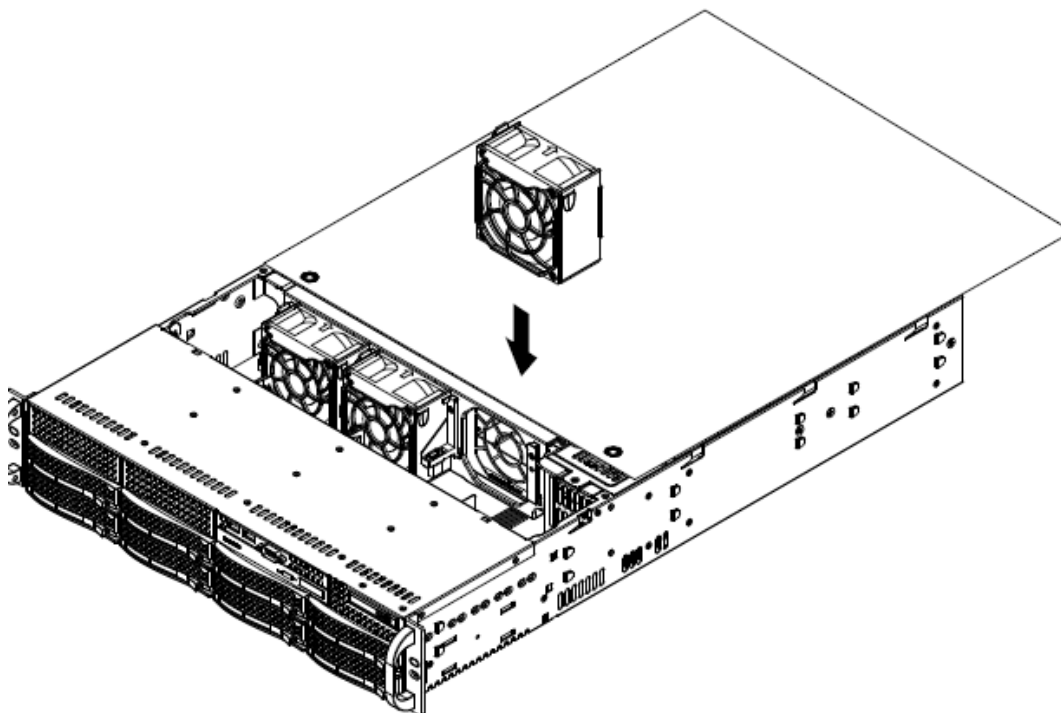
Fan speed is controlled by system temperature, as monitored by the RAIDiator firmware. If a fan fails, the remaining fans ramp up to full speed, the overheat/fan fail LED on the control panel turns on, and an email alert are sent to the system administrator. Replace any failed fan at your earliest convenience. Remove the top chassis cover while the system is still running to determine which of the fans has failed.



To replace a system fan:

Note: System power does not need to be shut down since the fans are hot-pluggable.

1. Remove the chassis cover.
2. Press the tabs on the sides of the fan to unlock and remove the fan and its housing. The fan's power connection automatically detaches.
3. Replace the failed fan with an identical fan. See "[Technical Specifications](#)" in Appendix A for fan specifications.



A “click” can be heard when the fan is fully installed in place and the power connections are made. If the system power is on, the hot-plug feature causes the fan to start immediately upon being connected to its header on the main board.

Replacing a Power Supply

The ReadyNAS 3200 has a 700 watt redundant power supply consisting of two power modules. Each power supply module has an auto-switching capability, which enables it to automatically sense and operate at a 100V-240V input voltage.

If either of the two power supply modules fails, the other module takes the full load and allows the system to continue operation without interruption. The **PWR Fail** LED illuminates and remains on until the failed unit has been replaced. The power supply units have a hot-swap capability, meaning you can replace the failed unit without powering down the system.

You do not need to shut down the system to replace a power supply unit. The backup power supply module keeps the system up and running while you replace the failed hot-swap unit. Replace the failed power supply with the same model.

1. Unplug the AC power cord from the failed power supply module.
2. Depress the locking tab on the power supply module. Use the handle to pull it straight out with the rounded handle.
3. Install a new power supply. Push the new power supply unit into the power bay until you hear a click. Secure the locking tab on the unit.
4. Plug the AC power cord back into the unit.

Replacing the Onboard Battery

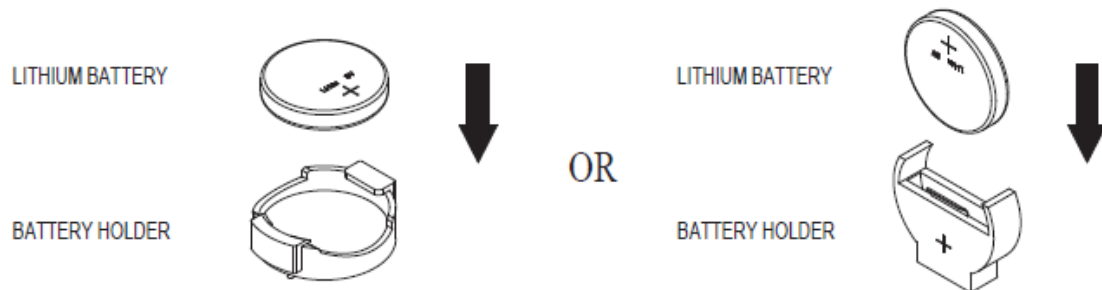
This battery must be replaced only with the same or an equivalent type recommended by NETGEAR. Dispose of used batteries according to the manufacturer's instructions.



DANGER:

There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities.

To replace the battery, open the system, locate the battery holder, and replace the battery, taking care to install the new one with the correct side up.



Default Settings and Specifications



This appendix provides the factory default settings and system specifications.

- [Factory Default Settings](#)
- [Technical Specifications](#)

Factory Default Settings

To return the ReadyNAS to its factory default configuration settings shown below, see [“Reinstalling the Firmware”](#) on page 21.

Feature	Default
Login	
User login URL when the ReadyNAS 3200 is not connected to a DHCP server	https://192.168.168.168/admin
Admin user name (case-sensitive)	admin
Admin login password (case-sensitive)	netgear1
Management	
System configuration	FrontView web-based configuration and status monitoring
Discovery, multi-unit status monitoring, and RAID formatting utility	RAIDar for Windows, Mac, and Linux
LAN Connections	
MAC address	Default address
MTU size	1500
Ports	2 Auto Sense 10/100/1000BASE-T, RJ-45
LAN IP address	DHCP acquired

Technical Specifications

The following table lists the system specifications.

Feature	Specification
Electrical	
Power supplies (PSU)	Two 700W server rated AC power supplies
Input	100-240V AC, 50/60Hz
Power consumption	170W typical with 6 TB disks
Thermal	
Cooling Fans	Three 80 mm dual ball-bearing chassis cooling fans
Fan failure alerts	Hardware LED, software via FrontView and high temperature email alert with auto-shutdown option.
Operating Environmental	
Temperature	0° - 40° C (32° - 104° F)
Humidity (non-condensing)	20% - 80%
Physical	
Form factor	2U rack mount with 12 hot-swappable SATA drive bays
Dimensions (H x W x D)	89 x 437 x 648 mm (3.5 x 17.2 x 25.5 in.)
Weight	32.8 kg (76 lb) with 12 disks
Optional Spare Parts	
Disk tray	Hot-swappable SATA drive tray
Cooling fan	80mm dual ball-bearing chassis cooling fan
PSU	Hot-swappable 700W PSU
Rack mount	Sliding rails

Notification of Compliance



Certificate of the Manufacturer/Importer

It is hereby certified that the TBD has been suppressed in accordance with the conditions set out in the BMPT-AmtsblVfg 243/1991 and Vfg 46/1992. The operation of some equipment (for example, test transmitters) in accordance with the regulations may, however, be subject to certain restrictions. Please refer to the notes in the operating instructions.

The Federal Office for Telecommunications Approvals has been notified of the placing of this equipment on the market and has been granted the right to test the series for compliance with the regulations.

Bestätigung des Herstellers/Importeurs

Es wird hiermit bestätigt, daß das TBD gemäß der im BMPT-AmtsblVfg 243/1991 und Vfg 46/1992 aufgeführten Bestimmungen entstört ist. Das vorschriftsmäßige Betreiben einiger Geräte (z.B. Testsender) kann jedoch gewissen Beschränkungen unterliegen. Lesen Sie dazu bitte die Anmerkungen in der Betriebsanleitung.

Das Bundesamt für Zulassungen in der Telekommunikation wurde davon unterrichtet, daß dieses Gerät auf den Markt gebracht wurde und es ist berechtigt, die Serie auf die Erfüllung der Vorschriften hin zu überprüfen.

Voluntary Control Council for Interference (VCCI) Statement

This equipment is in the Class B category (information equipment to be used in a residential area or an adjacent area thereto) and conforms to the standards set by the Voluntary Control Council for Interference by Data Processing Equipment and Electronic Office Machines aimed at preventing radio interference in such residential areas. When used near a radio or TV receiver, it may become the cause of radio interference. Read instructions for correct handling.

FCC Caution

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- 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.

Regulatory Compliance Information

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

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

Europe – EU Declaration of Conformity



Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

EN300 328, EN301 489-17, EN60950

For complete DoC please visit the NETGEAR EU Declarations of Conformity website at:

http://kb.netgear.com/app/answers/detail/a_id/11621/

EDOC in Languages of the European Community

Cesky [Czech]	<i>NETGEAR Inc.</i> tímto prohlašuje, že tento Radiolan je ve shode se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede <i>NETGEAR Inc.</i> erklærer herved, at følgende udstyr Radiolan overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erkläre <i>NETGEAR Inc.</i> , dass sich das Gerät Radiolan in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti [Estonian]	Käesolevaga kinnitab <i>NETGEAR Inc.</i> seadme Radiolan vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, <i>NETGEAR Inc.</i> , declares that this Radiolan is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]	Por medio de la presente <i>NETGEAR Inc.</i> declara que el Radiolan cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ <i>NETGEAR Inc.</i> ΔΗΛΩΝΕΙ ΟΤΙ Radiolan ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French]	Par la présente <i>NETGEAR Inc.</i> déclare que l'appareil Radiolan est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente <i>NETGEAR Inc.</i> dichiara che questo Radiolan è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo <i>NETGEAR Inc.</i> deklarē, ka Radiolan atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo <i>NETGEAR Inc.</i> deklaruoja, kad šis Radiolan atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart <i>NETGEAR Inc.</i> dat het toestel Radiolan in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.

EDOC in Languages of the European Community

Malti [Maltese]	Hawnhekk, <i>NETGEAR Inc.</i> , jiddikjara li dan Radiolan jikkonforma mal-htigijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, <i>NETGEAR Inc.</i> nyilatkozom, hogy a Radiolan megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
Polski [Polish]	Niniejszym <i>NETGEAR Inc.</i> oświadcza, że Radiolan jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
Português [Portuguese]	<i>NETGEAR Inc.</i> declara que este Radiolan está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]	<i>NETGEAR Inc.</i> izjavlja, da je ta Radiolan v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	<i>NETGEAR Inc.</i> týmto vyhlasuje, že Radiolan spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi [Finnish]	<i>NETGEAR Inc.</i> vakuuttaa täten että Radiolan tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Härmed intygar <i>NETGEAR Inc.</i> att denna Radiolan står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Íslenska [Icelandic]	Hér með lýsir <i>NETGEAR Inc.</i> yfir því að Radiolan er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
Norsk [Norwegian]	<i>NETGEAR Inc.</i> erklærer herved at utstyret <i>Radiolan</i> er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

FCC Requirements for Operation in the United States

FCC Information to User

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

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

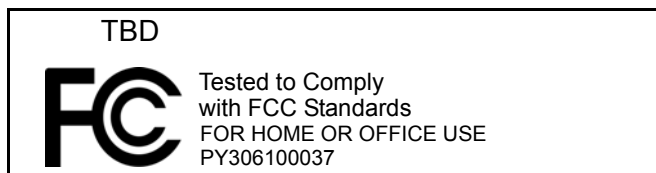
We, *NETGEAR, Inc.*, 350 East Plumeria Drive, Santa Clara, CA 95134, declare under our sole responsibility that the model MS2110 TBD complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

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

FCC Radio Frequency Interference Warnings & Instructions

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following methods:

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



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

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (TBD) does not exceed the Class B limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Canada ID: 4054A-FVX538

Index

A

add disk **2-25**
airflow **1-8**

B

battery, replace **2-30**
boot menu **2-19**

C

changing between X-RAID and Flex-RAID **2-19**
circuit overload **1-8**
console **1-6**
control panel **1-5, 2-16**

D

default login **1-14**
diagnostics **2-15**
disk trays **1-5**
drive bays **1-5**

E

electrical safety **1-9**
electrostatic discharge (ESD) **1-10**
Ethernet ports **1-6**

F

failed disk
 ordering replacement disks **2-26**
 replacing, how to **2-26**
firmware
 reinstall **2-21**
Flex-RAID **2-22**
front panel **1-5**
FrontView **1-14**

G

grounding **1-9**

M

mechanical loading **1-8**

N

netgear1 **1-14**

O

operating temperature **1-8**

P

ports **1-5, 1-6**
power supplies **1-6**
power supply, replacing **2-30**

R

rack mount **1-8, 1-11**
 installation **1-12**
rackmount
 install **1-8**
RAID
 reconfigure **2-22**
 setup,reconfiguring **2-22**
RAIDar **1-14**
RAIDIator **2-21**
rear panel **1-6**
replace disk **2-27**
replace fan **2-29**
replacement disks
 ordering **2-26**
replacing disks **2-25**
resynchronizing volume **2-25, 2-27**

S

safety **1-7**
setup location **1-11**
shut down **2-18**
Shutdown **2-24**
status display **1-5**

status lights [1-5](#)
support [1-2](#)
system access [2-28](#)
system specifications [A-33](#)

T

technical support [1-2](#)

U

USB [1-6](#)

V

VGA [1-6](#)

X

X-RAID2 [2-22](#)