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# Seagate Business Storage 1-Bay, 2-Bay, and 4-Bay NAS Administrator Guide



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## Seagate Business Storage NAS Administrator Guide

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# 1. Preface

- About This Guide
- Kit Contents
- Computer Requirements
- Finding More Information

## About This Guide

This *Administrator Guide* is for administrators, the individuals who initially set up a Seagate® Business Storage NAS, create user accounts, shared folders, group accounts, and so on. This guide provides information to help you complete a basic setup of your NAS, and additionally includes information to help you customize advanced NAS settings. The NAS Manager application (the web user interface application pre-loaded on your Seagate NAS) is your main interface into all of your Seagate NAS features. Much of the information in this guide is also available as context-sensitive Help in the NAS Manager application.

This guide covers the administration steps for Seagate 1-Bay, 2-Bay, and 4-Bay NASs.

A companion guide, the *Seagate Business Storage 1-Bay, 2-Bay, 4-Bay NAS User Guide* is also available for users on your network. This guide includes information that targets user tasks, such as getting on the network, accessing the NAS, backing up the data on their computer, streaming media, and sharing data.

## Kit Contents

Your Seagate NAS kit includes:

- Seagate Business Storage NAS (1-Bay, 2-Bay or 4-Bay)
- Power adapter
- Ethernet cable
- Installation DVD, including software and warranty information
- Seagate Business Storage NAS Quick Start Guide

## Computer Requirements

Any computer that will access your Seagate NAS must meet these requirements:

## Software

A Microsoft Windows<sup>®</sup> or Apple Macintosh<sup>®</sup> computer running one of these operating systems:

- Windows XP, Windows Vista<sup>®</sup>, Windows 7 or Windows 8, and with the latest Service Pack installed
- Mac OS X 10.4.11 or later

## Supported Web Browsers

- Microsoft Internet Explorer 8 or newer
- Apple Safari 3, 4 or newer (Windows or Mac)
- Mozilla Firefox 3 or newer (Windows or Mac)

## Hardware Requirements

- Local area network (LAN) or wireless LAN (WLAN)
- Network switch or router, with at least one available 10/100/1000 Ethernet port
- Internet connection (for remote access to NAS and software and firmware updates)
- Ethernet port on your PC

## Finding More Information

For more information about your Seagate NAS, see:

- NAS Manager Online Help
- Seagate Business Storage NAS Backup Help
- Seagate Business Storage NAS 1-Bay, 2-Bay, 4-Bay Administrator Guide
- Seagate Business Storage NAS 1-Bay, 2-Bay, 4-Bay User Guide
- Seagate Global Access User Guide

For more information, please refer to the Seagate Web site at [www.seagate.com/support](http://www.seagate.com/support).

## 2. About Seagate® Business Storage NAS

- Introduction
- Main Components of the Seagate NAS

### Introduction

The Seagate NAS is a file server that is used for storing and sharing all types of computer files on a local network.

In general, you can use your Seagate NAS to:

- Create a central storage place for the files you want to share with other people on your local network or over the Internet.
- Create and maintain automatic backup copies of all your files—even your operating systems.
- Share your files—contracts, business presentations, progress reports, and so on—on your local network or with business clients over the Internet.
- Recover from a computer disaster, such as the unintentional deletion of important files, the failure of a disk drive, the loss or theft of your computer.
- Access your Seagate NAS content over the Internet from anywhere in the world.
- Share a USB printer with other people on your local network.
- Create a media server so that everyone on your local network can enjoy downloaded photos, videos, and music.
- Enable the iTunes® service so that users can stream music directly to a network computer with iTunes installed.

### Main Components of the Seagate NAS

Your Seagate NAS has four main components:

- **Seagate Business Storage NAS**—Hardware that includes the disk drives that store and protect your files.
- **Seagate NAS Discovery**—Software that finds and connects your Seagate NAS to your computer.

- **NAS Manager**—An application embedded in your Seagate NAS that helps you set up, modify, and monitor your NAS from your computer (or even remotely) using a Web browser.
- **Seagate NAS Backup Software**—Software that helps you back up files, applications, and operating systems to your NAS. You can also restore your system and data using this software.



## 3. Setting Up Your Seagate® NAS

Your Seagate NAS comes with many default values to help you quickly set up your NAS and start protecting and sharing your data.

### Connecting Your NAS and Installing Software

Before you begin, verify the following:

- Your computer meets the requirements listed on page 5.
  - You have a solid, flat, stable surface for the NAS to sit on in an area with reliable ventilation.
  - The NAS's vents will not be covered or blocked and that the NAS is not placed near a heat source.
  - The NAS won't be in an area where liquids may be spilled on it.
1. Use the Ethernet cable included in the kit to connect the Seagate NAS to a switch or router on your local network. Connect the Ethernet cable to the LAN port.
  2. Use the power adapter included in the kit to connect the Seagate NAS to a grounded power outlet.

The NAS powers on automatically and the LED lights on the front panel of the NAS illuminate.

3. Insert the installation DVD into your computer.  
The software will detect the operating system of your personal computer and launch the appropriate software. If you encounter any issues, please review the steps provided in your Quick Start Guide or visit [www.seagate.com/support](http://www.seagate.com/support).

The DVD includes information that will step you through the process of discovering your Seagate NAS and completing an initial setup:

- **Install the Seagate software (Discovery, Backup, and Rescue Media Builder):** Seagate recommends that you choose to install all software provided on the DVD. After you install the software, you'll be asked if you want to launch the Discovery software.
- **Discover your Seagate NAS:** When you launch the Discovery software, the software searches your LAN for all attached Seagate NASs.
- **Complete Setup Wizard:** After you select the NAS you want to set up, click **Next**. The NAS Manager launches automatically and you start a wizard. This three-step setup wizard walks you through the steps of 1) changing the admin password, 2) completing a general setup (select a web protocol, time zone, and current date and time), and 3) configuring your network.

**TIP:** Online Help is available on every page in the NAS Manager application. Click the **Learn more** link for detailed information about each page.

## Completing the Setup

Your Seagate NAS comes with many default values to help you quickly set up your NAS and start protecting and sharing your data.

The following table lists the default values you can accept when setting up your Seagate NAS.

**Table 1:** Seagate NAS Defaults

1-Bay	2-Bay	4-Bay
1 administrator account	1 administrator account	1 administrator account
1 Pre-selected Local Area Network 1 (LAN 1).	1 Pre-selected Local Area Network 1 (LAN 1). Two LANs available.	1 Pre-selected Local Area Network 1 (LAN 1). Two LANs available.
DHCP network mode	DHCP network mode	DHCP network mode
2 Shared folders: Download and Public	2 Shared folders: Download and Public	2 Shared folders: Download and Public
1 Volume	1 Volume	1 Volume
RAID protection not available	RAID 1 protection	RAID 5 protection

**Important:** The shaded rows represent a critical path to complete your setup. If you want to customize your NAS by changing the default Volume and RAID configurations, you need to change these items during setup *before* you store data. If you make these changes after you have stored data, **you will lose your data.**

If you want to accept the default settings for your Seagate NAS, you need to complete the “Getting Started Tasks” on page 10. These default settings include using the default Volume and RAID settings. If you want to add more volumes or change RAID, to make changes now, go to “Customizing Your Seagate® NAS” on page 19.

**TIP:** If you are not familiar with some of the terms used in this guide, review the “Glossary” on page 37.

The NAS Manager Dashboard has a Getting Started panel that helps you track the recommended steps to set up your NAS.

## Getting Started Tasks

The tasks you need to complete are organized into four categories:

- **Basic:** Set up users, shared folders, groups, global access and email notifications.
- **Protection:** Set up your NAS for local backups, NAS to NAS backups, and USM/USB/NAS transfers.

- **Service:** Set up your NAS as a Media Server.
- **Advanced Settings:** Add new volumes, change RAID settings, enable power settings, enable virtualization (iSCSI), and add printers.

To initially set up your Seagate NAS, you need to complete the Basic and Protection tasks. To learn how to set up your Seagate NAS as a media server and configure other advanced settings, go to “Customizing Your Seagate® NAS” on page 19.

## Completing the Basic Setup Tasks

Complete the following tasks to set up your NAS. To review information about these tasks in the NAS Manager, go to **Home > Getting Started**. Click a link on the Getting Started page to go directly to the task you want to complete.

## Creating User Accounts

Your Seagate NAS comes with one administrator account only. Your next step is to use the NAS Manager application to create individual user accounts.

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**Note:** When you create user accounts you'll also need to assign each user to the default shared folders (Download and Public) or the new shares you create.

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In the NAS Manager, go to **Users & Groups > Users**, and then click the **Add User**. You need to supply the following information for each user account that you create.

- **User Name:** The name the user enters when logging into the NAS Manager.
- **Admin Rights:** You can assign another individual administrator rights to help you monitor and manager activities on your Seagate NAS.
- **Full Name:** The user's first and last name.
- **Password and Confirm Password:** Enter up to 16 alphanumeric characters.
- **Group Membership:** If groups exists, assign each user to a group. See “Creating User Groups” on page 13.
- **Create User Private Share:** You can quickly create a private share (shared folder) for each user. The private share has the same name as the user name and a password is required to access the share. A private share can be used (for example) by each user to back up their local data, save pictures and videos, etc.
- **Volume:** Which volume (if there is more than one) the private share should be created in.
- **Services:** Which type(s) of file service should be supported by the private share:
  - **CIFS (Common Internet File System):** People with different computers running Windows operating systems can share files without having to install special software.
  - **FTP (File Transfer Protocol):** Provides secure file sharing over the internet between your Seagate NAS and other computers.

- NFS (Network File System): Provides file sharing with computers running Linux or UNIX operating systems or computers running NFS client software.
- AFP (Apple Filing Protocol): A proprietary network protocol that offers file services for Mac OS X and original Mac OS.
- WebDAV (Web Distributed Authoring and Versioning): An extension of the Hypertext Transfer Protocol (HTTP) that facilitates collaboration between users in editing and managing documents and files stored on World Wide Web servers.
- RB (Recycle Bin Service): A feature that when enabled saves files deleted from the shared folder so that they can be retrieved.
- Media Service: A feature that enables your NAS as a media server. Set a shared folder to automatically download media files to default locations on the media server.

## Creating Shared Folders

A shared folder can be either public (open to everyone, with some restrictions) or private (restricted to selected user accounts):

- Public shared folders: Public shared folders are not restricted. NAS users can mount/map as many public shares as they need to. Your Seagate NAS comes preconfigured with two public shares named: Download and Public.
- Private shared folders: By default, a private shared folder is associated with one user account, and only users with permission can access that shared folder. The owner of the shared folder can also grant other people access to some or all of the files on the shared folder by using Seagate Global Access.

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**Note:** To mount/map more than one *private* share at a time, each private share must have the same log on credentials.

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As an administrator, you can create, modify, or delete shares at any time, as required. However, when you delete a share, you lose all the files stored in that share. Use caution when deleting shares from your Seagate NAS.

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**Note:** If you want to set up your Seagate NAS as a media server, do not remove the Public shared folder. This is the default shared folder used to store media; it is not configurable in the media server.

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In the NAS Manager, go to **Storage > Shared Folders**, and then click **Add Shared Folder**. You need to supply the following information for each shared folder you create:

- Shared Folder Name: Enter a descriptive and easy to remember name for the new shared folder.
- Description: Enter a description of the shared folder.

- **Services:** Click the service(s) you want for this new shared folder.

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**Note:** Review a detailed explanation in “Creating User Accounts” on page 11

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- **Volume:** Select the volume in which to create the shared folder.
- **Recycle Bin Service:** Protect files on the share from being accidentally deleted. Deleted files can be restored by the administrator.
- **Media Service:** Use your Seagate NAS to share digital photos, videos and music with people on your local network and stream iTunes music.
- **Encrypt Shared Folder:** Protect the shared folder so that it is only accessible with the use of an encryption key. The encryption process places the security key on a user-supplied USB drive that is connected to the NAS. If the NAS is powered off, you must insert the USB drive into the NAS’s port to “unlock” the secured share. The USB drive can be removed after the share is encrypted, but must be used if the NAS is restarted.
- **Shared Folder Access:** Set up access control after creating this shared folder.

In the NAS Manager, go to **Users & Groups > Shared Folder Permissions** to set up access control. Click the Edit icon next to the shared folder you want to modify. Ensure that the Public Access checkbox is not selected. Options display allowing you to:

- Grant access to specified users only.
- Limit some users to read-only access. *Read-only* access means that a user can view files on the shared folder, but can’t edit those files or upload files to the shared folder.
- Granting full access to the shared folder, which allows the user to save and back up files to the shared folder, edit files on the shared folder, and download any files from the shared folder to a computer or to a USB/USM drive connected to the NAS.

## Creating User Groups

You can make it faster and easier to manage shared folder access by sorting Seagate NAS users into groups.

In the NAS Manager, go to **Users & Groups > Groups**. Click **Add Group**. You need to supply the following information for each group that you create.

- **Group Name:** Enter a name for the group that makes it easy to identify and remember. Spaces are not allowed in group names.
- **Description:** Enter a description of the group (for instance, a common function, a common location in the office, access to common shares, etc.)
- **Users:** Select the users you want to be part of the group.

## Enabling Seagate Global Access

Seagate Global Access allows users to access the content stored on your Seagate NAS remotely from a web browser or optionally from a mobile device. As an administrator, you must first enable Seagate Global Access on your Seagate NAS. Then, you need to create a user account (your administrator account is not registered with the Seagate Global Access service). You can enable Seagate Global Access for each user on your NAS, or ask each user to enable Seagate Global Access.

In the NAS Manager, go to **Sharing > Global Access**.

### To create a new Seagate Global Access account

Click the Enable checkbox. Supply the following information:

- **User:** Select a username from the drop-down list.
- **Email:** Enter your email address. Each user will receive a notification via email to help them complete the setup of their Seagate Global Access account.
- **Password:** Enter a password. This is the password the user will use to access Seagate Global Access remotely.
- Click Submit to create the account.

### To register an existing TappIn account with Seagate Global Access

Click the Enable checkbox. Supply the following information:

- **User:** Select a username from the drop-down list.
- **Email:** Enter the email address used to create the TappIn account. The user will receive a notification via email to help them complete the registration of their Seagate Global Access account.
- **Password:** Enter a password. This is the password the user used to set up the TappIn account.
- Click Submit to create the account.

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**Note:** When you click Submit, you are associating the username on the Seagate NAS with an existing TappIn account to obtain access to Seagate Global Access.

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Seagate Global Access support Android and iOS devices. For review the Quick Start Guides and User Guides for mobile Seagate Global Access, go to [www.seagate.com/support](http://www.seagate.com/support).

## Setting up Email Notifications

Email notifications help you monitor and manage Seagate NAS activities. You can additionally add other individuals to receive email notifications. In the NAS Manager, go to **System > Administration**.

To set up email notifications for your Seagate NAS, click **Enable**. Supply the following information:

- **Email Recipients:** Enter the email addresses for individuals who will receive email notifications from the NAS. To add a new row, click the + icon.

Click **Send Test Mail** to ensure that the information you entered is complete and accurate. When the test completes successfully, click **Save**. Email notifications are now set up and will be sent when certain events occur.

Congratulations! If you have completed setting up the basic tasks you are more than 80% done with your Seagate NAS setup. Your next step is to schedule protection tasks, where you schedule back ups for local computers, NAS to NAS backups, and OneTouch transfers.

## Completing Protection Tasks

There are a lot of ways you can use your Seagate NAS to protect your data. As administrator, you can locally protect your personal PC or Mac:

- **To back up PC data:** Install the backup software provided on the DVD on your personal PC.
- **To back up Mac data:** Enable the Seagate NAS as a target for Apple® Time Machine® backup. Then, from your Mac, do the following:
  - Open the Time Machine and click **Select Disk**.
  - Select **.TMBACKUP**
  - Enter your Seagate NAS user name and password.

Backup with start automatically.

**TIP:** The *Seagate Business Storage NAS User Guide* provides instructions specifically for your users to help them install software to back up their computers, access the NAS, stream media content, and so on.

## Creating a NAS to NAS Backup Job

You can set up NAS to NAS backup, where a permanent link is created between your Seagate NAS and another Seagate NAS on your network, and automatic and continuous backups of your Seagate NAS take place. Continuous backups provide the best protection against data or device loss, especially if the second Seagate NAS is located in a different building or part of the city (or country) than your Seagate NAS.

To set up the *permanent link*, you first need to define information on the NAS target (this is where you want your backups to be saved). You need to create an authentication name and password, and then identify aliases.

In the NAS Manager, select **Protect > Protect Server Settings**.

Select the NAS target (in the Server dropdown at the top of the NAS Manager application), and then create an authentication name and password. When you create the backup job from the NAS source, you need to provide the authorization name and password in order to write information to the NAS target. This level of security ensures that unauthorized individuals cannot overwrite information on the NAS target.

An alias is a name you associate with a volume. You will use this name when you create your backup job.

After you have completed the Protect Server Settings, go to **Protect > Protect Job Manager**, and select the NAS-NAS Backup tab. Click **New Protect Job**.

**TIP:** Make sure you have selected the NAS source (in the Server dropdown at the top of the NAS Manage application).

Supply the following information:

- Backup server select: All Seagate NAS servers on your network should display in the drop-down list. You want to select the target server you specified in Protect Server Settings.
- IP address: Optionally, type the IP address of the NAS server you want to use as your backup target.
- Alias name: Choose an alias for this backup job. The alias name represents a specific shared folder you are going to copy your backup data into.
- Authentication name and password: Type the authentication name and password for the target server.
- Job Name: Enter a name for the backup job.
- Source: Select one or more shared folders on this source server to back up to the target server.
- Destination: Select the destination for your backup job.
- Backup Frequency/Time: Select a schedule for your backup jobs.

## Creating a Transfer Job

Create one or more jobs to transfer data to or from your Seagate NAS, to or from a USM drive or USB attached device. From a Seagate 1-Bay and 2-Bay NAS, when you click the OneTouch button, your selected OneTouch transfer job automatically starts to transfer data, regardless of its schedule. From a Seagate 4-Bay NAS, use the LCD controls to start a OneTouch transfer job.

In the NAS Manager, go to **Protect > Protect Job Manager**, and select the NAS-USM-USB Transfer tab. Click **New Transfer Job**. Supply the following information:

- Select a transfer direction: USB to NAS, NAS to USB, USM to NAS, NAS to USM
- Job name: Enter a name for the transfer job.



- Source: Select the shared folder(s) you want to transfer.
- Destination: Select the shared folder where you want the transferred data to reside.
- Transfer/Time Frequency: Set up a schedule for the transfer job.

To set up a default OneTouch transfer job, select a transfer job in the table, then click **OneTouch Default**.

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**Note:** You can have only one default OneTouch transfer job per NAS.

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Congratulations. You have completed the basic and protection setup steps. You can now start using your Seagate NAS to protect your data.

## Distributing Seagate NAS User Information

Once you have created user accounts, provide these items to each Seagate NAS user so they can get started using your Seagate NAS:

- The Seagate Discovery software
- The Seagate Backup software (optional)
- The user's Seagate NAS login name and password
- The names of the shared folders that the user has access to, and the limitations of their access—if any
- Seagate Business Storage NAS 1-Bay, 2-Bay, 4-Bay User Guide
- Seagate Global Access User Guide



## 4. Customizing Your Seagate® NAS

This chapter covers advanced settings and configurations for your Seagate NAS. Click an item in the following list to jump to the topic:

- “Working with Volumes” on page 19
- “Understanding RAID” on page 20
- “Setting up Your Seagate NAS as a Media Server” on page 21
- “Customizing Network Settings” on page 22
- “Adding Additional Security to Your Seagate NAS” on page 25
- “Configuring Power Consumption” on page 25
- “Enabling Virtualization (iSCSI)” on page 26

### Working with Volumes

By default, the available storage space in your Seagate NAS is configured with one volume. A *volume* is storage space that can be made up of one or more disk drives or part of a single disk drive. You can create more volumes (and shared folders) on your Seagate NAS if you want to divide the total storage space into smaller amounts that you can allocate for different uses.

For example, you could create three volumes to hold different types of information:

- Volume A: Business Files
- Volume B: Backup File Storage
- Volume C: Media Files

You can use the same disk drives in multiple volumes providing there is available space on those drives. For instance, you could use half the space on hard drives 1 and 2 to create Volume A, and the other half of the space on the same hard drives to create Volume B.

### Creating New Volumes

In the NAS Manager, go to **Storage > Volumes / RAID**. Click **Add New Volume**. Supply the following information:

- Volume Name: Enter a name for the new volume.
- Volume Description: Enter a description for the new volume.
- Disk Selection: Select one or more hard disk drives for your volume.

The following table provides information for all Seagate NAS models. You may not have all disk configurations available for your new volume creation.

**Table 2:** Disk Configurations

Disk(s)	Volume Type
1	Spanned
2	Spanned, striped or mirrored volume.
3+	Spanned, striped or mirrored volume (with RAID 5)

- Volume Encryption: Optionally enable volume encryption.

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**Note:** Make sure there is a USB drive inserted in the Seagate NAS's USB port if you want to enable volume encryption. The security key is saved to the drive during the encryption process.

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- Raw Volume: Optionally create a block-level (raw) volume.

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**Note:** Virtualization (iSCSI) requires a raw volume.

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- Volume Size: Enter a volume size and optionally set the volume size to be the maximum.

## Understanding RAID

RAID stands for Redundant Array of Independent Disks and is a technology that builds redundancy into your storage system to help keep your data safe from disk drive failures and other catastrophes.

RAID comes in many levels, which vary according to the amount of protection they provide (and how they provide it), and the number of disk drives they support.

By default, your Seagate NAS is preconfigured with a RAID protection level:

- Seagate 1-Bay NAS: No RAID protection available.
- Seagate 2-Bay NAS: RAID 1
- Seagate 4-Bay NAS: RAID 5

Table 3 explains the different levels of RAID.

**Table 3:** Supported RAID Levels for Volumes

RAID Level of Volume	Number of Disk Drives Required	Description
RAID 0 (Also known as striping)	2 – 4	A volume where data is distributed evenly (striped) across the disk drives in equal-sized sections. A striped volume does not maintain redundant data, and so <i>offers no data protection</i> .
RAID 1 (Also known as mirroring)	2	A volume where one disk drive is a mirror of the other (the same data is stored on each disk drive). Provides data protection.
RAID 5	3 – 4	A volume with RAID 5 uses data striping and parity data to provide redundancy. (Parity is extra information that's used to re-create data if a disk drive fails. In volumes with RAID 5, parity data is striped evenly across the disk drives with the stored data.)
RAID 10	4	A volume with RAID 10 is built from two or more equal-sized RAID 0 volumes. Data in a volume with RAID 10 is both striped and mirrored.
Span (Also known as a JBOD <sup>a</sup> )	1 – 4	A group of disk drives in a server, <i>not protected by RAID</i> .

a. 'Just a Bunch of Disks'.

Seagate recommends that only users familiar and comfortable with RAID technology make changes to the server's RAID protection. Here are some available options:

- Seagate 2-Bay NAS. You can choose to use RAID 0 protection, also known as “striping,” where data is distributed evenly (striped) across the disk drives in equal-sized sections, and “span”, also known as JBOD. RAID 0 offers no data protection; span does not provide RAID protection.
- Seagate 4-Bay NAS. You can choose to use a different level of RAID protection for your volumes—your Seagate 4-Bay NAS supports RAID levels 0, 1, 5, 10, and JBOD. However, RAID 5 is highly recommended as it provides the best level of protection available on your Seagate 4-Bay NAS.

## Setting up Your Seagate NAS as a Media Server

Set up your Seagate NAS server as a media server to stream media files to DLNA<sup>®</sup> compliant devices or computers running iTunes<sup>®</sup> software.

You can set the media server to download media files into default folders automatically. You can also set up your Seagate NAS as an iTunes server so that users can stream music directly to a network attached computer with iTunes installed or to an iTunes supported device that is connected to a network computer.

When you enable your Seagate NAS as a media server, files are automatically downloaded into specific folders. You need to create those folders on your NAS before you enable the service.

Access the Public shared folder on your Seagate NAS, and create the following folders:

- Our Music
- Our Pictures
- Our Videos

In the NAS Manager, go to **Media > Media Service**. Click **Enable**.

## Customizing Network Settings

You can customize these network settings in your Seagate NAS.

- LAN/IP Address
- Network Mode
- Enable DSN Server
- Specify MTU Size
- IP Filters
- Web Services
- Workgroup
- Dynamic DSN
- Printer Manager

## Configuring Your LAN/IP Address

Select a LAN port to use when connecting to your network: LAN 1, LAN 2 or Aggregation.

---

**Note:** Seagate 1-Bay NAS has one LAN configuration only.

---

Aggregation allows you to connect to the network using both LAN ports simultaneously:

- Round Robin LAN: Load balance your LANs.
- Fail Over LAN: One LAN network takes over if the other one fails.

## Setting a Network Mode

By default, your Seagate NAS's network mode is set to use Dynamic Host Configuration Protocol (DHCP). By selecting DHCP, the DHCP server assigns IP addresses to your NAS automatically. Unless you are part of a large corporation with an IT department, Seagate highly recommends using the DHCP network mode.

If you choose to use Static network mode, the Seagate NAS always uses the same IP address. With Static network mode, the following settings must also be configured:

- IP address: The IP address for your Seagate NAS.
- Netmask: The netmask for the IP address you entered.
- Default Gateway: The IP address of your gateway or router.

## Enabling DNS Server

A DNS server runs special-purpose networking software, features a public IP address, and contains a database of network names and addresses for other Internet hosts. You can choose to enable a DNS server automatically or manually. In NAS Manager, go to **Network > LAN/IP Address** to make changes.

## Setting an MTU Size

The maximum transfer unit (MTU) specifies the maximum transmission size of an interface. By default, your Seagate NAS has a default of 1500 bytes. In NAS Manager, go to **Network > LAN/IP Address** to make changes.

## Configuring IP Filters

Internet Protocol (IP) filters give you control over who can access your Seagate NAS. When you create an IP Filter, you enter the IP address and then select an access setting (Allow or Deny).

## Configuring Web Services

Web Services include Web Access, FTP Services, UPnP Port Forwarding and NFS Service. The following is a brief description of these services:

- Web Access: Hypertext Transfer Protocol (HTTP) is the most common way that data files are accessed on the Internet. You can set your Seagate NAS to use HTTP or HTTPS (HTTP over Secure Socket Layer (SSL)). HTTPS requires that you have set SSL on the NAS. For more information, see “Add an SSL Certificate and Key to the Server” on page 25.
- File Transfer Protocol (FTP) is a common way to send and receive files over the Internet. The Seagate NAS allows users to transfer files to and from the NAS using FTP, either anonymously or with administrator-assigned access and credentials. You can add a level of security when transferring data using FTP by enabling the Secure Sockets Layer (SSL)/Transport Layer Security (TLS) protocols. For more information, see “Add an SSL Certificate and Key to the Server” on page 25.
- If your router supports Universal Plug and Play (UPnP), you can set up UPnP port forwarding. UPnP makes it easier to integrate devices into your Seagate NAS network.

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**Note:** UPnP is generally done without authentication; it's possible that someone could use UPnP to open ports into a network they have already breached.

---

- NFS (Network File System) lets all users on a network share files that are stored on different types of computers. You must enable NFS if you have set up a virtual machine environment with the Seagate NAS as allocated space.

## Changing a Workgroup to a Domain Member

By default, your Seagate NAS is set as a workgroup. A workgroup is a number of computers on a network that share resources.

Alternatively, you can set your Seagate NAS as a domain member. A domain is a group of computers administered as a single unit from a central location.

When you add the Seagate NAS as a domain member, it is centrally managed by a Windows domain controller, which provides another level of security when users attempt to access the server. Users within the domain receive their own unique accounts and must be authenticated to receive access.

## Customizing Dynamic Domain Name System (DNS) Settings

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**Note:** Only people familiar with Dynamic DNS should try changing these settings.

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Dynamic DNS (DDNS) is a way of maintaining the link between an unchanging domain name (for example, [www.seagate.com](http://www.seagate.com)) and a constantly changing IP address of a computer that uses DHCP instead of a static IP address.

A DDNS service keeps track of changing IP addresses and forwards all network traffic for your domain name to whatever the current IP address is. You need to have a DNS service provider to customize this setting.

## Adding a Printer Manager

You can make a USB printer available on your local network by connecting it to your Seagate NAS. When you add a printer manager, you need to select a spooler destination.

When you send a job to your printer, it goes into a queue, and it is the spooler service that actually sends the queued jobs to the printer.

## Adding Additional Security to Your Seagate NAS

Add an SSL certificate and key to your Seagate NAS and reset the volume encryption key. To add a certificate and key or reset the volume encryption key, log in to the NAS Manager and go to **System > Advanced Settings**.



## Add an SSL Certificate and Key to the Server

---

**Note:** Only people familiar with SSL should try adding SSL support to a Seagate NAS.

---

SSL (also known as Transport Layer Security) is a type of encryption used to protect data being sent over a network or the Internet. SSL uses a system of keys, like secret passwords, to send and receive files securely. You add SSL support to your Seagate NAS by entering an SSL certificate and key pair.

## Resetting the Volume Encryption Key

If you have protected a volume with the use of an encryption key, you can reset this key. However, be aware that resetting the encryption key of an encrypted volume makes the data on the old volume inaccessible. Seagate recommends that you back up any important data on the volume before resetting the encryption key.

## Configuring Power Consumption

There are a couple of adjustments that you can make to help you manage and conserve the power your Seagate NAS uses. To make changes to power settings, in the NAS Manager, go to **System > Power Settings**.

## Setting up an Uninterruptible Power Supply (UPS)

An uninterruptible power supply (UPS) is a power supply with a battery in it that maintains power to a computer or NAS in the event of a power failure. It's intended to provide enough power to allow you to save whatever files you're working on and properly power off the computer or NAS; it's not meant to keep any system running for the duration of a power failure.

Click the Enable checkbox. The NAS will be shut down during a power failure when the UPS battery life reaches 15% of full power or less than 5 minutes.

(Optional) To set a time limit to shut down the NAS, enter the time (in seconds) in the Timeout box. For example, 300 seconds is 5 minutes; five minutes after a power failure the NAS will shut down.

## Setting up Wake on LAN

Wake on LAN is an Ethernet computer networking standard that allows a NAS to be turned on or woken up remotely by a network message. The message is usually sent by a program executed on a computer connected to the same local area network. When you Suspend and Wake on LAN your NAS is turned off, however, the network interface card remains active and listening for a special network message. When the network interface card receives a Wake on Lan (WOL) magic packet message, the NAS will automatically turn on.

## Enabling Power Saving

By default, the disk drive in your Seagate NAS spins constantly whenever the NAS is powered on; however, there are times (like evenings, weekends, and holidays) when your NAS may not be in use. You can use the Power-saving HDD Standby feature to conserve energy and lower your power bill by setting the disk drive to stop spinning and enter a standby mode when it's not in use.

## Scheduling Power On and Off

You can set a schedule to power on and power off your Seagate NAS. For example, you may want to power off the NAS if you don't need to access it over a weekend. You can select one or more days and set the hour and minute to power on and off the NAS.

## Enabling Virtualization (iSCSI)

Internet Small Computer System Interface (iSCSI) allows users to access the Seagate NAS over an Ethernet connection, even if the NAS is not physically near the computer.

After you create an iSCSI drive on the Seagate NAS, users can connect to the drive from their computers. iSCSI is best suited for transmitting large amounts of data. Volume(s) associated with iSCSI must have a RAW format.

Note: iSCSI is only available for Windows operating systems. Client computers must use the Microsoft iSCSI Initiator administrative tool to connect to the server.

To enable iSCSI, in NAS Manager, go to **Storage > Virtualization (iSCSI)**.

## 5. Monitoring and Managing Your Seagate® NAS

Monitoring and managing your Seagate NAS are important tasks for an administrator. If you've set up email notifications, you'll automatically receive information to help you monitor your NAS. Additionally, the NAS Manager Dashboard (**Home > Dashboard**) provides a quick status of available disk space, firmware updates, and system details.

This chapter is separated into two sections:

- “Monitoring Your Seagate NAS” on page 27
- “Managing Your Seagate NAS” on page 31

### Monitoring Your Seagate NAS

As your users access the NAS to back up data and stream videos and music, you may want to proactively monitor the health of the NAS and its disk drives.

#### Basic Hardware Safety and Maintenance

Follow these guidelines to keep your Seagate NAS operating properly. Failure to do so may result in slower performance or loss of data.

- Always shut down and restart the server using the NAS Manager application (go to **System > Administration**) or by pressing the POWER button.

---

**Warning:** Do not unplug the NAS or shut it down from a power outlet strip.

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- Keep the server on a flat, level, stable horizontal surface. Keep it cool, keep it dry, and don't put anything on it or beside it that might block its vents and allow it to overheat.
- Clean the outside surfaces of the server with a damp cloth only (don't use cleansers of any kind), and unplug the server before you clean it to avoid possible electric shock.
- Don't try to open or remove the outer case that houses the server. Contact Seagate Support at [www.seagate.com/support](http://www.seagate.com/support) for assistance with drive replacement.
- Never remove more than one drive at a time. Failure to do so will result in data loss.
- Call for professional service if:
  - The NAS's power cord becomes damaged.
  - The NAS has liquid spilled onto it or is exposed to water.
  - The NAS has been dropped or if the outer case becomes damaged.

- The NAS doesn't operate normally even though you're following all the operating instructions properly.

## Monitoring Status with the NAS's LEDs

Each Seagate NAS has different LEDs to support its specific components. Click an item in the list to jump to the topic:

- "Monitoring Seagate 1-BAY NAS with LEDs" on page 29
- "Monitoring Seagate 2-BAY NAS with LEDs" on page 29
- "Monitoring Seagate 4-BAY NAS with LEDs" on page 30

## Monitoring Seagate 1-BAY NAS with LEDs

**Table 4:** 1-BAY NAS Front and Rear Panel LEDs

LED	State and Color	Indication
OneTouch Button	Solid Blue	Ready for backup
	Blinking Blue	Backup in progress
	Solid Amber	Error
System Status	Solid Blue	NAS is ready for use
	Blinking Blue	NAS starting up or shutting down
	Solid Amber	NAS has a system error
	Off	NAS is powered off
Hard Drive Activity	Solid Blue	Drive is installed and operating properly
	Solid Amber	Drive has failed
LAN Port (Left and Right LEDs)	Off	Port has no network connection
	Solid Green (L)	Connected to a gigabit Ethernet network
	Blinking Orange (R)	Network connection

## Monitoring Seagate 2-BAY NAS with LEDs

**Table 5:** 2-Bay NAS Front and Rear Panel LEDs

LED	State and Color	Indication
<b>Front Panel LEDs</b>		
Power	Solid Blue	NAS is powered on
	Off	NAS is powered off
System Status	Solid Blue	NAS is ready for use
	Blinking Blue	NAS is powering on RAID is rebuilding
	Solid Amber	NAS has a system, RAID or hard drive error
Hard Drive Status	Solid Blue	Drive is ready
	Blinking Blue	Drive activity
<b>Rear Panel LEDs</b>		
LAN Port	Off	Port has no network connection
	Blinking Orange (L)	Link activity
	Green (R)	Network connection

## Monitoring Seagate 4-BAY NAS with LEDs

**Table 6:** 4-Bay NAS Front and Rear Panel LEDs

LED	State and Color	Indication
Power	Solid Blue	NAS is powered on
	Off	NAS is powered off
System Status	Solid Blue	NAS is ready for use
	Solid Amber	NAS has a system error
LAN Port 1	Off	Port has no network connection
	Solid Blue	Port has network connection
	Blinking Blue	Network connection is busy
LAN Port 2	Off	Port has no network connection
	Solid Blue	Port has network connection
	Blinking Blue	Network connection is busy
Disk Drive 1	Solid Blue	Disk drive is installed and operating properly
	Solid Amber	Disk drive has been removed or has failed
Disk Drive 2	Solid Blue	Disk drive is installed and operating properly
	Solid Amber	Disk drive has been removed or has failed
Disk Drive 3	Solid Blue	Disk drive is installed and operating properly
	Solid Amber	Disk drive has been removed or has failed
Disk Drive 4	Solid Blue	Disk drive is installed and operating properly
	Solid Amber	Disk drive has been removed or has failed

## Monitoring Drive Health

In the NAS Manager, go to **System > Drive Diagnostics**.

Your Seagate NAS includes a Self-Monitoring Analysis and Reporting Technology (SMART) built directly into the Seagate drives that lets the drives automatically monitor their own health and report on possible problems.

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**Note:** SMART works on Seagate drives only.

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To run a SMART diagnosis: Select a drive from the list. Drive information and SMART health status display automatically in the first two sections of the application page.

To run a SMART short test on the drive: Select a drive from the list, then click "Run SMART short test on drive". A short test checks the electrical and mechanical performance as well as the read performance of the disk. The results display in the S.M.A.R.T. Short Test Status box.

## Monitoring NAS Health

Seagate highly recommends that as the administrator, you have all email (Scheduling, Admin, and Alert) notifications send to you. These emails includes information about power disruptions, if an HDD needs to be replaced or has failed, and so on.

You can additionally monitor the Fan temperature to your NAS by going to **System > Administration**. Select either CPU or Board to receive a temperature reading. The Fan Speed adjusts automatically to compensate for hardware that may be overheating. If your CPU temp exceeds 55.0 C, take proactive measures, such as powering down your NAS.

**TIP:** When these conditions occur, if you've set up email notifications, you'll automatically receive information about these events.

## Managing Your Seagate NAS

There are a few things you should do to ensure your Seagate NAS is running optimally.

### Updating Firmware

Seagate products are run by firmware. Having the latest firmware can improve the performance and or reliability of your NAS. Seagate recommends applying new firmware to enhance the performance and/or reliability of your drive.

There are several ways you can be informed about firmware updates:

- Review the Dashboard (**Home > Dashboard**) for messages about available updates.
- Set up email notifications (**System > Administration**) to receive Admin notifications.
- Configure firmware updates (**Systems > Firmware Update**) to automatically install or inform you when updates become available.

### Managing Storage Consumption

You can manage the storage consumption on your Seagate NAS by setting storage limits for users through quotas. To manage storage consumption, in the NAS Manager, go to **Storage > Quota**.

Set storage space limits on any user account. The Quota service must be enabled for a volume. You can enter a specific amount of storage space (in GB) to allocate to a user account.

Occasionally, a user may exceed the quota you have set. You can set a grace time that allows the user to continue to exceed the quota. A default of 100 megabytes (MB) of storage space is added with a grace time limit.

## Managing Web Downloads

You can manage when large web downloads take place to prevent your Seagate NAS from being overloaded. In the NAS Manager, go to **Storage > Download Manager**.

The Download Manager places web download tasks in a queue, and each task runs in the order in which it appears in the queue. You can adjust the queue to re-prioritize download tasks, impose limits on when Web download tasks can run, and customize Web download times.

In addition to sorting and deleting jobs waiting to download, you can also select the maximum number of files that can be downloaded simultaneously and set a maximum download speed (in bytes, kilobytes, or megabytes per second).

## Recovering Deleted Files

Your Seagate NAS can be configured to save files that are deleted from a shared folder, allowing you to retrieve them later. This can be beneficial if one of your users accidentally deletes files from one or more shared folders they have access to.

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**Note:** Recycle Bin must be enabled for the shared folder. To enable the recycle bin service for a shared folder, go to **Storage > Shared Folders**.

---

You can customize your recycle bin by specifying the number of days to keep deleted files, set a maximum recycle bin size, and filter specific files and directory from the recycle bin. In the NAS Manager, go to **Storage > Recycle Bin Manager**.

To recover deleted files, in the Recycle Bin Volume tab, select the filename, and then click **Undelete**.

## Migrating Data

If you have defected hardware, you can move your drive to a different unit. The current migration paths supported are migrations from a Seagate 2-Bay NAS to a Seagate 2-Bay NAS and a Seagate 4-Bay NAS to a Seagate 4-Bay NAS.

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**Note:** Migration is only supported with similar NAS's. You cannot, for example, migrate data from a two-year old Seagate NAS to a new Seagate NAS.

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## Migrating Data from 2-BAY NAS

The Seagate 2-Bay NAS can have one or two drives configured.

Take one or both original drives and move them to another Seagate 2-Bay NAS.

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**Note:** You cannot remove or exchange a drive with a foreign drive or add a new drive.

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- If the original 2-Bay NAS configuration used only one drive, take the drive from the defected NAS and place it in the new 2-Bay NAS; the NAS should boot automatically.
- If the original 2-Bay configuration used two drives, take the two drives from the defected NAS and place them in the new 2-Bay NAS; the NAS should boot automatically.

## Migrating Data from 4-BAY NAS

A Seagate 4-Bay NAS can be configured with 1, 2, 3 or 4 drives.

Take one or more original drives and move them to another Seagate 4-Bay NAS.

---

**Note:** You cannot remove or exchange a drive with a foreign drive or add a new drive.

---

- If the original 4-Bay NAS configuration used only one drive, take the drive from the defected NAS and place it in the new 4-Bay enclosure; the NAS should boot automatically.
- If the original 4-Bay NAS configuration used two drives, take the two drives from the defected NAS and place them in the new 4-Bay enclosure; the NAS should boot automatically.
- If the original 4-Bay NAS configuration used three drives, take the three drives from the defected NAS and place them in the new 4-Bay enclosure; the NAS should boot automatically.
- If the original 4-Bay NAS configuration used four drives, take the four drives from the defected NAS and place them in the new 4-Bay enclosure; the NAS should boot automatically.

## Resetting Your Seagate NAS

Follow these steps to reset the Seagate NAS's name, DHCP setting (network mode) and log in password.

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**Note:** You will need a paperclip or other narrow device to perform this task.

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1. Carefully access the back of the server.
2. Ensure that the NAS is powered on and connected to the LAN.
3. On the back of the NAS, find a single small opening. The reset button is inside the opening.
4. Insert the end of the paperclip into the opening, then press and hold the reset button. *Do not* release the button yet.
5. Hold the reset button until the System Status LED on the front of the NAS blinks. This takes several seconds.

6. Release the reset button.

The NAS reboots itself. Once the NAS has restarted and the front LEDs are lit up, the reset is complete. The NAS is renamed to “BA-*MAC address*”, where *MAC address* is the last six characters of the NAS’s MAC address.

## 6. Solving Problems

This chapter provides solutions to the most common problems you may encounter while setting up and using your Seagate® NAS:

- “General Troubleshooting Tips” on page 35
- “Common Problems and Solutions” on page 35

### General Troubleshooting Tips

If you have problems setting up or using your Seagate NAS, follow these suggestions:

- Ensure that the NAS is properly connected to your local network. Check that the Ethernet cable is connected and functioning properly.
- Ensure that your network is functioning properly.
- Ensure that the NAS is properly connected to a power source and turned on. Check that all disk drives are functioning properly.
- Ensure that your computer meets the Seagate NAS system requirements. See “Computer Requirements” on page 5 for more information.
- Ensure that your computer is running a supported Web browser. See “Computer Requirements” on page 5 for a list of supported browsers.
- Ensure that you are logging in with the correct administrator user name and password. (Remember that passwords are case-sensitive.)

### Common Problems and Solutions

This section provides solutions to common problems that may occur in your Seagate NAS.

#### I can't connect to the NAS over the local network.

- Check that the NAS is powered on and connected to the network.
- Try connecting to the NAS from a different computer.
- Try using a different Ethernet cable.

#### I can't connect to the NAS over the Web.

- Check that the NAS has Global Access enabled. In NAS Manager, go to **Sharing > Global Access**.
- Enable Email Setup in NAS Manager and then send a test email. Go to **System > Administration**.

## I can't open NAS Manager.

Check that the NAS is powered on and connected to the network. Run NAS Discovery and try to reconnect with the server, then launch NAS Manager.

## I can't log in to NAS Manager.

Ensure that you are using a valid user name and password. Remember that user names and passwords are case-sensitive.

## I can't access a shared folder.

- Ensure that you have access to that shared folder.
- Ensure that you are using a valid user name and password. Remember that user names and passwords are case-sensitive.
- The volume that contains the share may be degraded because of a disk drive error or failure. Check the status of your server's disk drives; see Chapter 5 "Monitoring and Managing Your Seagate® NAS" on page 27 for more information.

## I can't access a file on a shared folder.

- Ensure that you are allowed access to that file.
- The volume that contains the share may be degraded because of a disk drive error or failure. Check the status of your server's disk drives; see Chapter 5 "Monitoring and Managing Your Seagate® NAS" on page 27 for more information.

## I can't store any more files on a shared volume because its volume is full.

- Consider removing some of the files currently stored on the NAS.

## A firmware upgrade failed.

Try to upgrade the firmware manually. For further assistance, contact Seagate Support at [www.seagate.com/support](http://www.seagate.com/support)

## A volume is in degraded mode.

A disk drive may have failed. For further assistance, contact Seagate Support at [www.seagate.com/support](http://www.seagate.com/support)

## I can't get streaming music from the Seagate NAS.

- Ensure that you have iTunes installed on your computer.
- Ensure that you are using a computer that's connected to the local network.
- Ensure that you have access to the shared folder where music files are stored.

## 7. Glossary

### **access level**

Also known as permission level, the amount of access any person has to the Seagate® NAS. NAS Manager application has two permission levels: *administrator* and *user*.

### **administrator**

A NAS administrator is responsible for the NAS server and all its settings. An administrator can set up or delete user accounts, group accounts, and shares; assign or remove access permissions; modify any setting on the server; and create other administrators. See also *user*.

### **archive backup**

See RSA key.

### **CIFS**

Common Internet File System. A file system that lets people with different computers running Windows operating systems share files without having to install special software.

### **domain**

A group of computers administered as a single unit from a central location.

### **event**

A problem or change in setting on the NAS. A change in the NAS's name or the failure of a disk drive are both server events.

### **external USB hard drive**

See USB drive.

### **firmware**

Software that's built into hardware.

### **format**

To format a disk drive is to prepare it for reading and writing data. Formatting erases background information from a disk drive, tests it, and prepares it for use. Formatting may destroy existing files on a disk drive. You must format a disk drive before you can use it.

### **FTP**

File Transfer Protocol. A format for exchanging files over the Internet. FTP is commonly used to upload files to or download files from a server over the Internet.

## **group account**

In NAS Manager, a collection of user accounts grouped together to make it faster and easier to manage access to shares. All users in a group have the same level of access to any particular share. See also user account.

## **hot-swap**

To remove and replace a disk drive without first powering off the server.

## **HTTP (Hypertext Transfer Protocol)**

Rules for exchanging the most common form of documents (hypertext documents) over the Internet.

## **HTTPS (Hypertext Transfer Protocol over Secure Socket Layer)**

Rules for exchanging HTTP documents over encrypted connections.

## **JBOD**

Just a Bunch of Drives. See span.

## **IP address**

The identifier of a computer, server, or other device on a TCP/IP network. IP addresses are a sequence of four numbers separated by periods. (For example, 123.456.78.1.) Every device on your local network has a unique IP address.

## **IP filters**

The ability to allow or deny access to a Seagate NAS based on an IP address.

## **global access**

The ability to remotely access content stored on a Seagate NAS from a web browser or from a supported mobile device application.

## **local access**

Access to the server from a computer on your local network. Or, manual access to the server, which involves physical contact with the server or its cables.

## **mirror**

A level of RAID protection also known as RAID 1. A mirror is built from two disk drives, where one disk drive is a mirror of the other (the same data is stored on each disk drive). Compared to independent disk drives, a mirrored volume provides faster performance, but has only 50% of the capacity.

## **NFS**

Network File System. An application that lets all users on a network share files that are stored on different types of computers.

## **NTP (Network Time Protocol) server**

Synchronizes the date and time of computers and servers on a network, based on Coordinated Universal Time (UTC).

## **parity**

Data created in volumes with RAID 5 protection that's used to reconstruct files if one of the disk drives in the server fails. See also RAID 5.

## **private share**

A shared folder that is accessible only to users with permission granted by the share's owner.

## **RAID**

Redundant Array of Independent Disks. A technology that combines disk drives together for improved performance and fault tolerance (the ability to withstand the failure of a disk drive).

## **RAID 0**

See stripe.

## **RAID 1**

See mirror.

## **RAID 5**

A level of RAID protection. A volume with RAID 5 is built from a minimum of three disk drives, and uses data striping and parity data to provide redundancy. (Parity is extra information that's used to re-create data if a disk drive fails. In volumes with RAID 5, parity data is striped evenly across the disk drives with the stored data.) Parity data provides data protection, and striping improves performance. See also stripe.

## **RAID 10**

A level of RAID protection. A volume with RAID 10 is built from two or more equal-sized RAID 1 volumes. Data in a volume with RAID 10 is both striped and mirrored. Mirroring provides data protection, and striping improves performance. See also mirror, and stripe.

## **RSA key**

An encryption decoder that's part of SSL, a type of encryption used to protect data being sent over a network or the Internet. "RSA" stands for Rivest, Shamir, and Adelman, who invented the technology.

## **Seagate Global Access service**

A service that you can use to view, download, share, and work with the files stored on your Seagate NAS from anywhere in the world. You can also use Global Access to upload files to your Seagate NAS.

## **shared folder**

A shared folder on your Seagate NAS that stores and protects backup files, as well as other files that can be accessed by other people.

## **SMART**

Self-Monitoring Analysis and Reporting Technology. Technology built into disk drives that let them automatically monitor their own health and report on possible problems. Not all disk drives have SMART support.

## **span**

A group of disk drives collected in a server, not protected by RAID. Also known as JBOD. See also RAID.

## **spin down**

Referring to disk drives, a term that means to stop spinning.

## **SSL certificate**

Secure Socket Layer certificate, part of the SSL encryption method. SSL (also known as Transport Layer Security) is a type of encryption used to protect data being sent over a network or the Internet. SSL uses a system of keys, like secret passwords, to send and receive files securely.

## **stripe**

Also known as RAID 0. A volume with striping includes two or more disk drives where data is distributed evenly (striped) across the disk drives in equal-sized sections. A striped volume does not maintain redundant data, and so *offers no data protection*.

However, compared to an equal-sized group of independent disks, a striped volume provides faster performance.



## **UPS**

Uninterruptible Power Supply. A power supply that has a battery in it that maintains power to a computer or server in the event of a power failure. A UPS is intended to provide enough power for you to save whatever files you're working on and properly power off the computer or server; it's not meant to keep any system running for the duration of a power failure.

## **USB**

Universal Serial Bus. The interface between your computer and the USB devices you plug into it. Your computer communicates with USB devices through the USB interface.

## **USB drive**

A portable disk drive that connects to a computer with a USB cable, instead of being installed inside the computer itself. Also known as a thumb drive, jump drive, flash drive, or external USB hard drive.

## **user**

In NAS Manager, a person who can save, back up, and share files using the Seagate NAS, but who can't modify user account, group account, share, or server settings.

## **user account**

An account, with a user name and password, that a person uses to access the Seagate NAS. User accounts have access level permissions associated with them.

## **volume**

Data storage space that can be made up of one or more disk drives, or of only part of a single disk drive.

## **wake on lan**

Wake on LAN is an Ethernet computer networking standard that allows a NAS to be turned on or woken up by a network message.

## **Web access protocol**

The rules for sending information over the Internet. Your Seagate NAS has two Web access protocol choices, HTTP and HTTPS.

## **workgroup**

A collection of computers on a network that share resources.

