

## Rsync-enabled NAS Hardware Compatibility List



### WHITEPAPER

BackupAssist Version 5.1

[www.BackupAssist.com](http://www.BackupAssist.com)

Cortex I.T.

© Cortex I.T. Labs 2001-2008

# Contents

---

<b>Introduction .....</b>	<b>3</b>
<b>Hardware Setup Instructions .....</b>	<b>3</b>
QNAP TS-409.....	3
Netgear ReadyNas NV+ .....	5
Drobo rev1.....	9
Synology Disk Station DS 408.....	10
<b>Troubleshooting and Support.....</b>	<b>15</b>
Appendix .....	15
Troubleshooting.....	15
Support details.....	15

## Introduction

This whitepaper will outline the setup of four NAS devices that will provide BackupAssist with an Rsync data host. The data host will be configured so BackupAssist for Rsync can connect and upload your data via either an Rsync daemon or Rsync via an SSH tunnel to the NAS device.

For the purposes of a **turnkey Internet backup solution**, we strongly recommend the QNAP for two reasons: first, it is the only one that supports secure Rsync – that is, running Rsync over SSH (the same encryption technology as https); and second, it is very easy to setup and configure, whereas other devices require more effort.

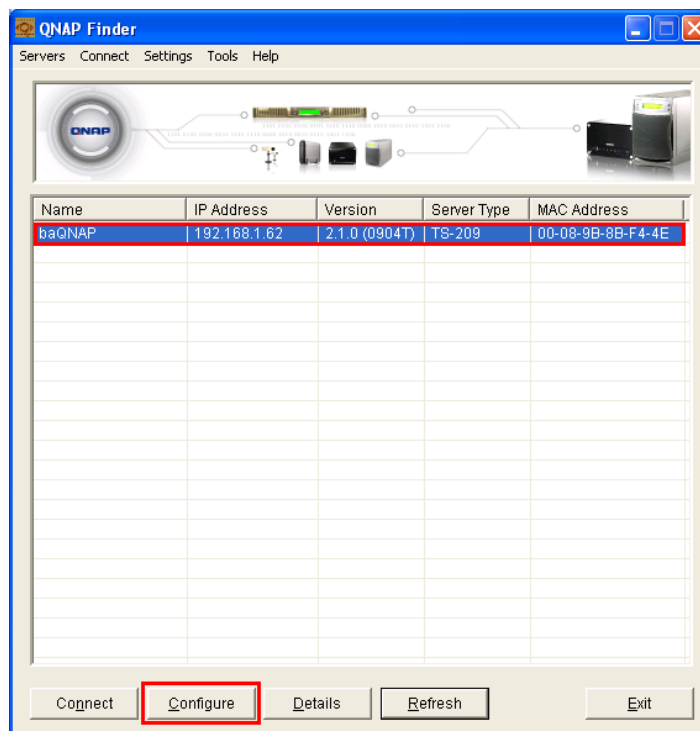
None of these devices are endorsed by BackupAssist, they are only devices that we have tested with BackupAssist for Rsync and are capable of accepting an Rsync connection from BackupAssist for the purpose of data transfer.

## Hardware Setup Instructions

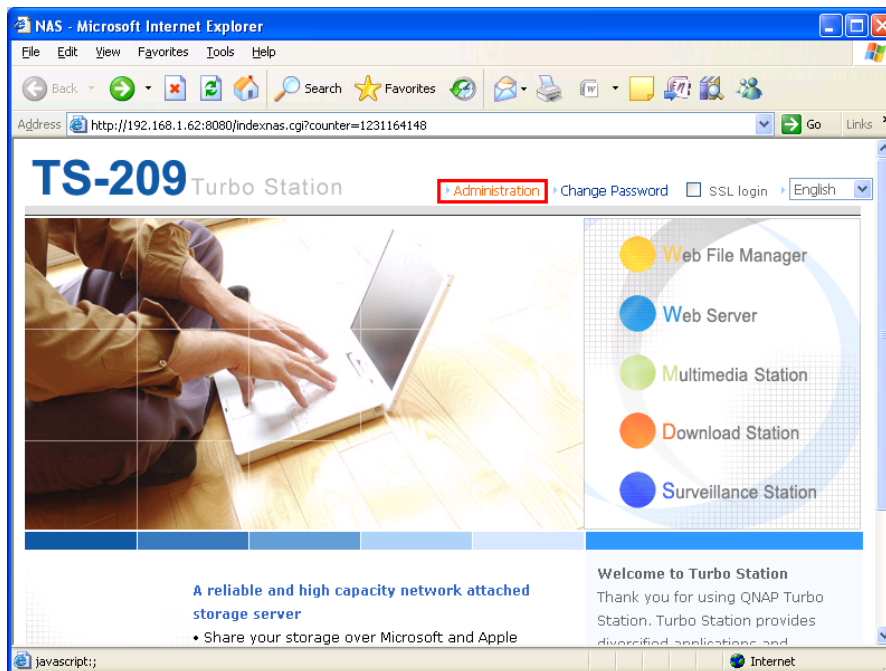
### QNAP TS-209

This setup guide begins with a QNAP TS-209 with factory default settings.

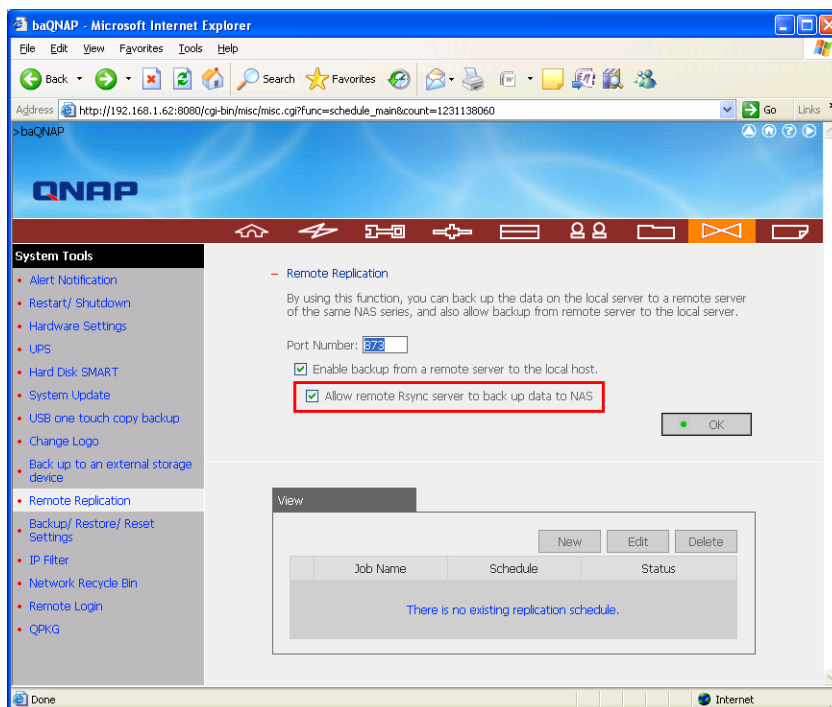
- 1) Begin by setting up your NAS as per the 'out-of-the-box' instruction. This include adding disks, powering the device up and connecting it to your network.
- 2) Insert the setup disk into a workstation on the same network as the QNAP, install and run the QNAP Finder.
- 3) Once QNAP finder has located your QNAP click on the entry in the table, then click 'configure' (see below). This will begin the QNAP setup wizard that will guide you through setting up the device. During the wizard you will be required to change the Admin account password as well as set up the network interface. It is important during these steps you take note of the password and IP address for the QNAP.



- 4) After you complete the setup wizard your default internet browser will be launched and the below page will load. Click “Administration” and enter the administrator account details.

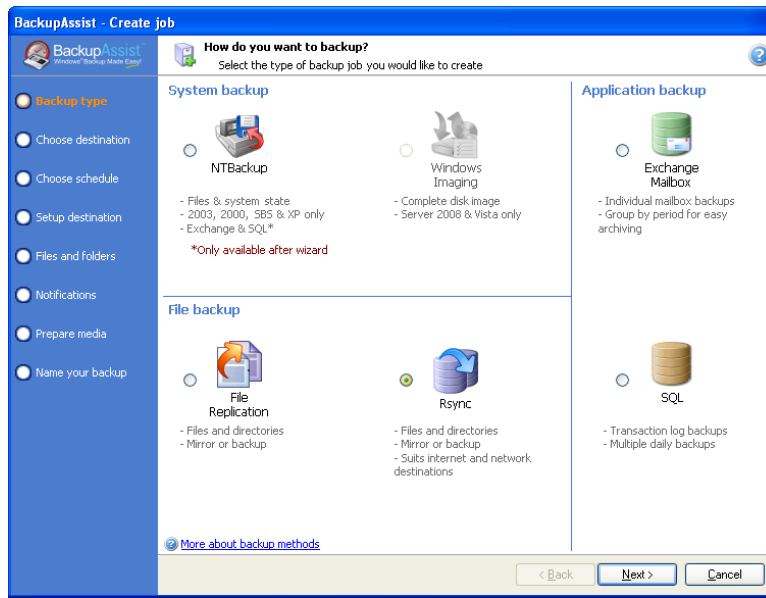


- 5) Once at the main page, click ‘Remote replication’ under the ‘System tools’ heading. Once the page loads, check the tick box marked “Allow remote Rsync server to back up data to NAS”, then click “ok”. Close the window to log out.



You should now configure the BackupAssist client to use your NAS data host. Install BackupAssist v5.1 or later. You will have a free 30 day trial, but beyond this trial period, you will need to purchase a licence for “BackupAssist for Rsync” to continue using it.

1. Once BackupAssist is installed you will need to create a new BackupAssist backup job.
  - i. Launch the BackupAssist console and choose File > New backup job from the top menu.
  - ii. Select Rsync as your Backup type and click Next (see screenshot below).



- iii. In the Rsync Server options section (see screenshot below), complete the following:
  - a. Enter your Rsync server name (or IP address), and choose “Rsync over SSH”. This option ensures that your data is encrypted over the wire.
  - b. Under “Path on server”, type in the path to your backup directory. For the QNAP you will want to write you backup data to a sub directory in the /share/ path i.e. /share/backups/ for ease of access.
 

Note: It is best to use a new, empty directory for this path. The parent directory must exist, but the sub directory will be created when the job is first run, i.e. /parent/sub\_directory/.
  - c. Enter the account name “admin” as your username
  - d. Click ‘Register with server...’ You will be prompted to enter your password, and, once entered, BackupAssist will create a public/private key pair to authenticate you to the data host. This will be the only time you need to enter your password. If successful, a message will appear to the right of the ‘Register with server...’ button.
  - e. Click the ‘Test connection...’ button to test communication with the Rsync server.

To gain access to you data, you can access the /share/ directory in one of two ways:

**As a network share:** Simple type `\\[Server IP]` into (start > run) and you will be presented with the contents of the /share/ directory/

**Via FTP:** By default the QNAP runs an FTP server on port 21. To access this simple go to your web browser and type into the address bar `ftp://[SERVER IP]/`. You will be prompted for the Admin account details before you are able to access your data.

## Netgear ReadyNas NV+

**Note:** Since conducting our testing, Netgear have released the **Pro Business, NVX** and **2100** models which our customers tell us support Rsync over SSH. Some of the following steps may not be applicable to these models.

This setup guide begins with a ReadyNas NV+ with the factory default settings.

1. Start by setting up your NAS so that you are able to access the web-control panel.
2. Once you have the device RAID operational, open a browser window and navigate to [https://\[netgear IP\]/admin](https://[netgear IP]/admin) and log in using the admin account.

Note: the IP of your NAS can be found by looking at the small display located at the bottom of the NAS device. If this display is blank, briefly press the power button to activate it.

3. From the ReadyNas control panel click 'Setup Wizard' to begin the setup process. During this process there are a number of key steps required to allow BackupAssist to connect to the ReadyNas via Rsync, which are outlined below. Some of the setup, however, will be specific to your own network and is not covered in the scope of this whitepaper.

**Time date region:** *User set*

**Email contact settings:** *User set*

**IP config settings:** *User set* – you need to ensure, however, that this subnet is reachable by your BackupAssist machine.

**Gateway settings:** *User set* – these need to be setup correctly in order for the NAS to have access to the Internet so as to make use of Rsync over a WAN.

**Password creation:** The password you create in this step will be used by BackupAssist to connect to Rsync that will be running on this NAS.

**File sharing settings:** Depending on how access to the internet is configured on your network you may need to alter these settings.

**Protocols:** Here you will need to enable the Rsync protocol on the ReadyNas. To do this, simply tick the box marked "Rsync, a popular incremental backup protocol used in Unix and Linux environments."

**Streaming services:** *User set*

**Add-ons:** *User set*

**Shares on RAID Volumes:** No changes need to be made on this window.

**Add shares:** You will need to create a new share for your Rsync data to be stored. In this example we have created a share called "rsyncdata" with no size limit (data quota).

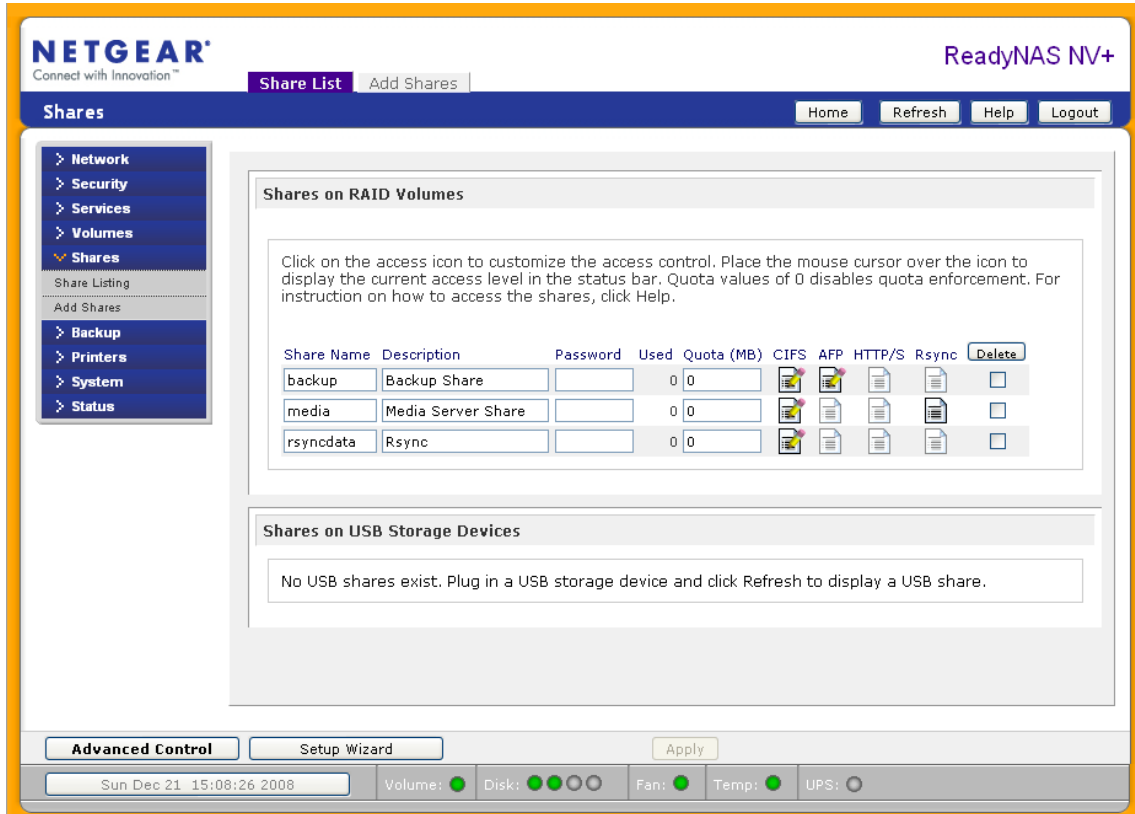
Enter the share names and descriptions you wish to add. You can optionally specify a share password and share-level disk quota. Disk quota value of 0 disables quota enforcement.

Name	Description	Password (optional)	Quota (MB)
rsyncdata	Rsync		0
			0
			0
			0
			0

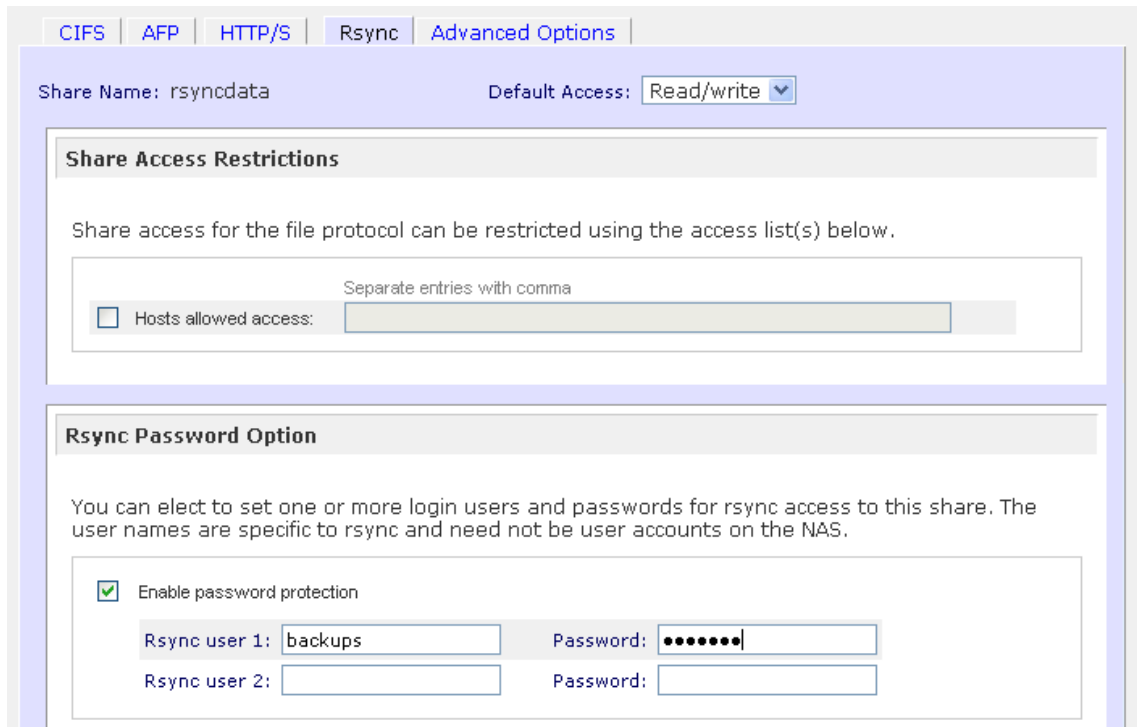
**USB Printers:** *User set*

**Registration:** *User set*

- Once the wizard has been completed, click the 'Advanced Control' button, then expand the "Shares" menu and click "share listing" to access the view below.



- Under the "Rsync" column click the document icon that corresponds to you Rsync data share (in this case, "rsyncdata") to access the Rsync connection options.
- Enter the username and password that BackupAssist will use to connect to your Rsync server.



i. You will also need to change the following settings on this screen:

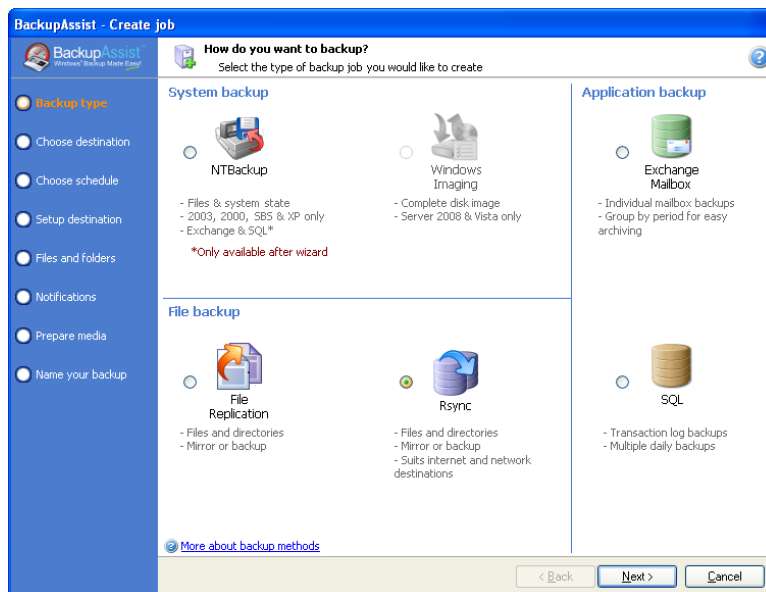
**Default Access = Read/Write**

**Enable password protection = enabled**

ii. Apply these settings then log out of the console.

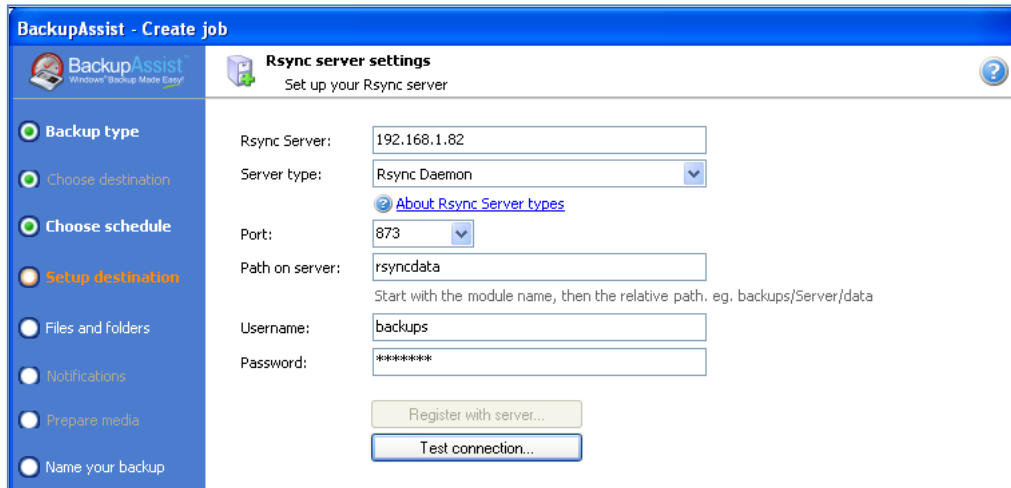
You are now ready to link the BackupAssist console to your NetGear ReadyNAS.

7. To configure the BackupAssist client to use your Windows data host first install BackupAssist v5.1 or later. You will have a free 30 day trial, but beyond this trial period, you will need to purchase a licence for "BackupAssist for Rsync" to continue using it.
8. Once BackupAssist is installed you will need to create a new BackupAssist backup job:
  - i. Launch the BackupAssist console and choose File > New backup job from the top menu.
  - ii. Select Rsync as your Backup type and click Next (see screenshot below)





- iii. Enter in your Rsync server name (or IP address), and choose "Rsync Daemon". This option will not encrypt your data.
- iv. Under "Path on server", type in "rsyncdata"
- v. Then enter in the Username: Admin and Password for this account to access the ReadyNAS. In our case **Backups** and the appropriate password.
- vi. Click the "Test connection..." button to test communication with the Rsync server



## Drobo rev1

This setup guide begins with Drobo rev1 with the factory default settings.

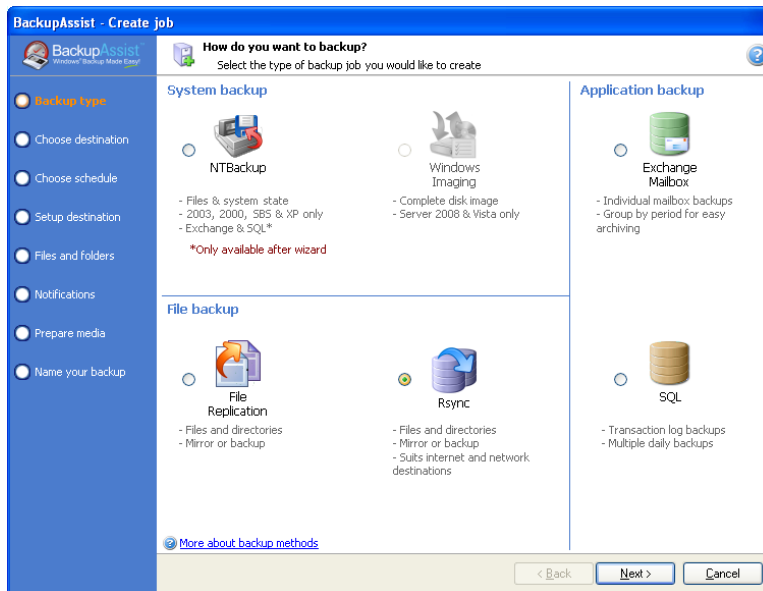
1. Begin by setting up your Drobo as per the manufacturer's instructions, ensuring that you have enabled your Drobo to run DroboApps by completing the following:
  - i. From the Drobo Dashboard open "Advanced Controls" and choose the "Tools" tab
  - ii. Click "Setup" from the DroboShare section and select the "DroboApps" tab
  - iii. Check "Enable DroboApps"
2. You will then need to download the Drobo Rsync client and place the downloaded file in the DroboApps folder of your Drobo. Client available from <http://www.drobo.com/droboapps/downloads/index.php?id=12>
3. To finish the installation of Rsync on your Drobo you will need to reboot it.
4. After you Drobo has restarted use a file browser to navigate to the DroboApps/Rsync/ directory and, using a plain text editor (such as notepad or wordpad), open the rsyncd.conf file. Under the [Drobo0] entry replace all entries with the following and save the file:

```
path = /mnt/DroboShares/Drobo
comment = Drobo Share
read only = false
```

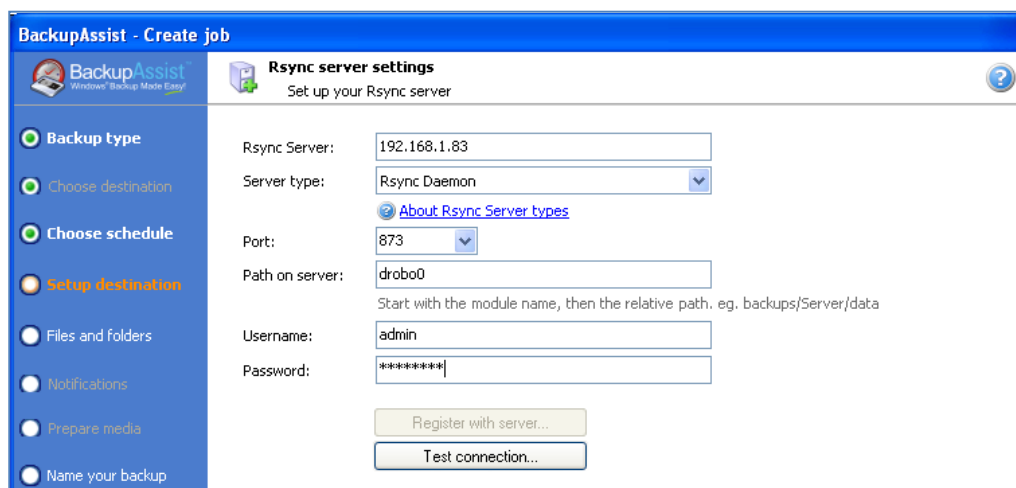
Note: we assume here that your main Drobo share is called "Drobo", which is the default name given by the Drobo client software.

You are now ready to link the BackupAssist console to your Drobo device.

5. To configure the BackupAssist client to use your NAS data host, first install BackupAssist v5.1 or later. You will have a free 30 day trial, but beyond this trial period, you will need to purchase a licence for "BackupAssist for Rsync" to continue using it.
6. Once BackupAssist is installed you will need to create a new BackupAssist backup job.
  - i. Launch the BackupAssist console and choose File > New backup job from the drop-down menu.
  - ii. Select Rsync from job type choices and then click Next (see screenshot below)



- iii. Enter in your Rsync server name (or IP address), and choose "Rsync Daemon". This option will not encrypt your data.
- iv. Under "Path on server", type in "drobo0"
- v. Then enter in the Username: Admin and Password for this account to access the Drobo.
- vi. Click the "Test connection..." button to test communication with the Rsync server. (see screenshot below)



## Synology Disk Station DS 408

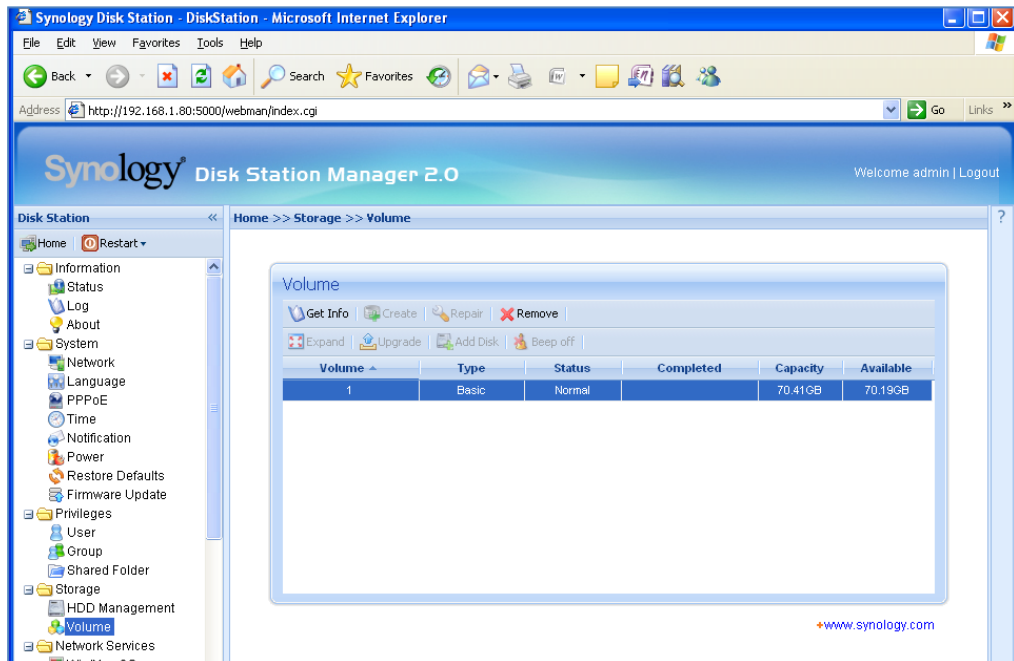
This setup guide begins with a Synology Disk Station with the factory default settings.

1. Being by setting up your Synology using the quick setup guide, making sure to specify a password for the 'Admin' account when prompted.

2. Once the setup has been completed, use the Synology Assistant to access the HTTP management console.
3. From your Synology's management console there are a number of things we need to setup:

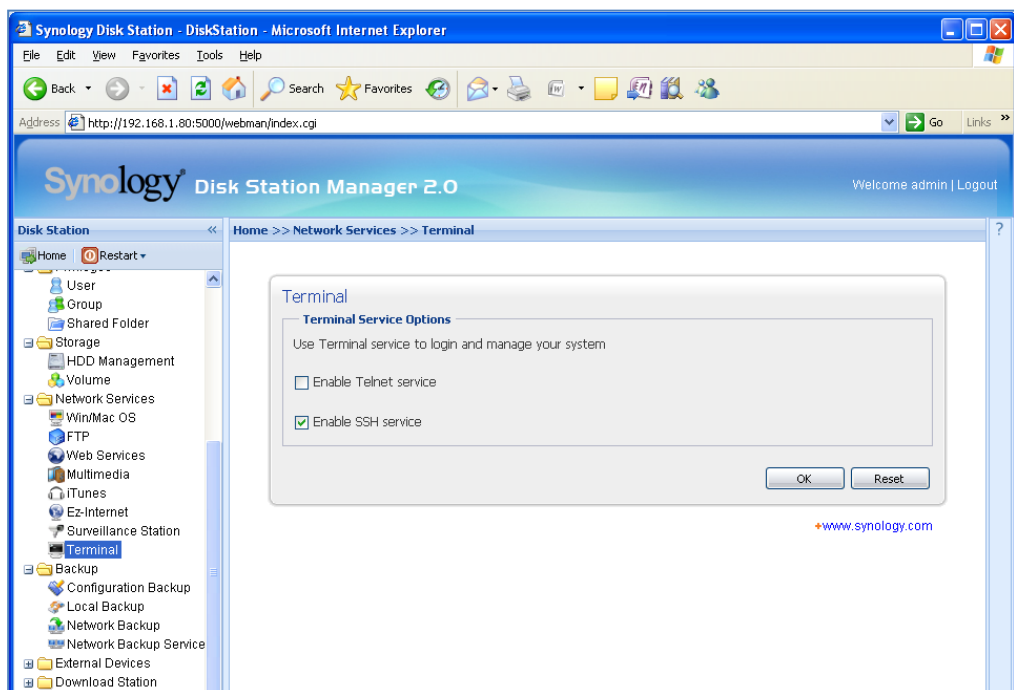
i. Creating a partition:

- a. Click **storage > volume** from the Synology management console
- b. Then choose **Create** from the volume management window and follow the wizard (please note for this example we are using volume1 for all of our storage, you can change this as you see fit)



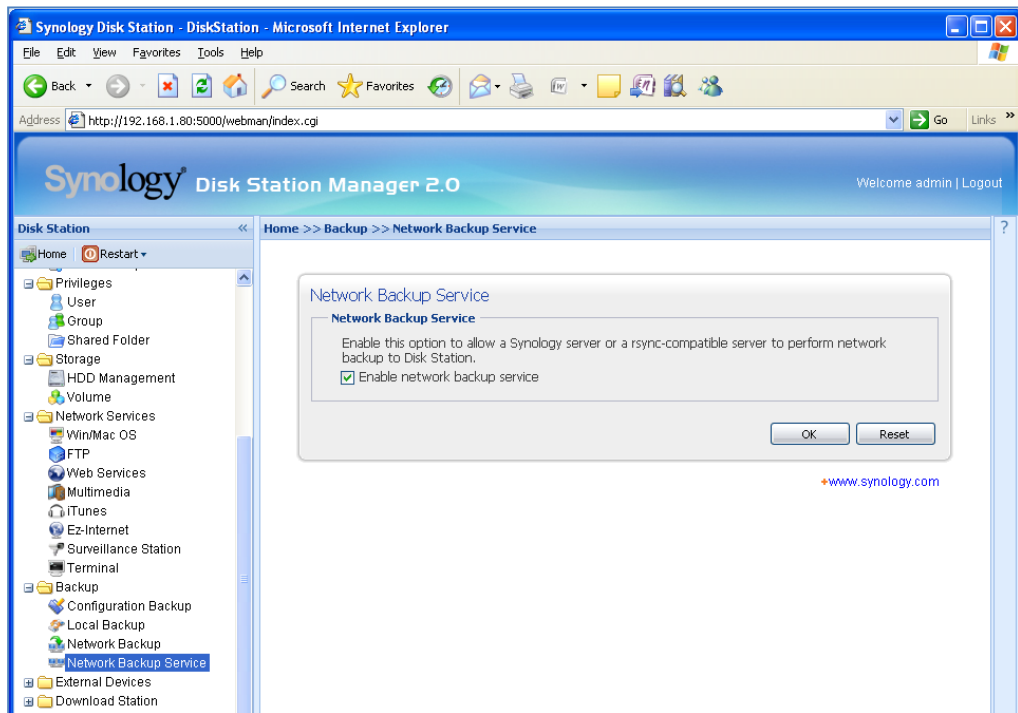
ii. Enabling Terminal Services:

- a. To do this click **Network services > Terminal** from the Synology management console and enable the checkbox marked "Enable SSH service"



iii. Enabling Network Backup (Rsync)

- a. To do this click **Backup > Network Backup Service** from the Synology management console and enable the checkbox marked “Enable network backup service”



4. Take note of the IP address of the Synology (found under **Information > Status**)
5. Using an SSH Terminal Service provider such as Putty (URL for putty) log into an SSH session on your Synology, using:
  - i. The **IP address** noted during step four.
  - ii. The **user name**: root
  - iii. The **password** of your Admin Account.
6. Once you have logged into the terminal you will need to modify the Rsync config file to allow BackupAssist to connect to the Synology and place the data in the correct directory. You will also need to modify the home directory of your Admin user to the backup directory.
  - i. From the terminal enter the following:
 

```
vi /etc/passwd
```
  - ii. Then using the arrow keys locate the following line:
 

```
admin:x:1024:100:System default user/volume1/@database/./bin/sh
```
  - iii. Using the 'x' key to delete characters make the line as follows:
 

```
admin:x:1024:100:System default user/volume1/./bin/sh
```
  - iv. the press 'shift' + 'z' twice to save and exit.
7. You will now need to modify your Rsync config file to point it to the backup directory.
  - i. Enter the following:
 

```
vi /etc/rsyncd.conf
```
  - ii. Then press 'i' to edit the file in text mode, and modify the line under [Netbackup] to be the following

```
Path = /volume1/NetBackup/
```

iii. Press 'esc' then 'shift' + 'z' twice to save and exit.

8. You now need to stop and start the Rsync service on the Synology to affect the changes you have made:

i. Enter the following:

```
ps aux
```

This will present you with a list similar to that shown below. You will need to kill the process using the process ID; in this case it is **5521**.

```
3319 root          SW   [kjournald]
5435 root          1028 S   /usr/syno/sbin/sshd
5467 root          2408 S   /usr/syno/apache/bin/httpd -f /usr/syno/apache/conf/h
5521 root          1156 S   /usr/syno/bin/rsync --daemon
5524 root          1948 S   sshd: root@tty0
5526 root          388 S   -ash
11259 root          352 T   vi /etc/passwd
16370 root          740 R   ps aux
DiskStation>
```

ii. To kill this process, locate it in the list and with your process ID type the following:

```
kill 5521
```

Where **5521** is your Rsync process ID

iii. Then you will need to restart it with the following line

```
/usr/syno/bin/rsync --daemon
```

iv. Then type:

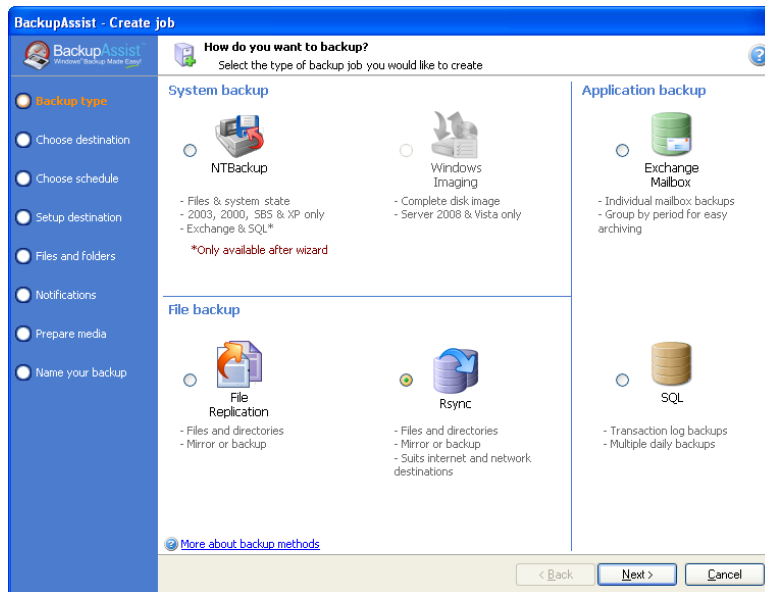
```
Exit
```

You are now ready to link the BackupAssist console to your Synology NAS device.

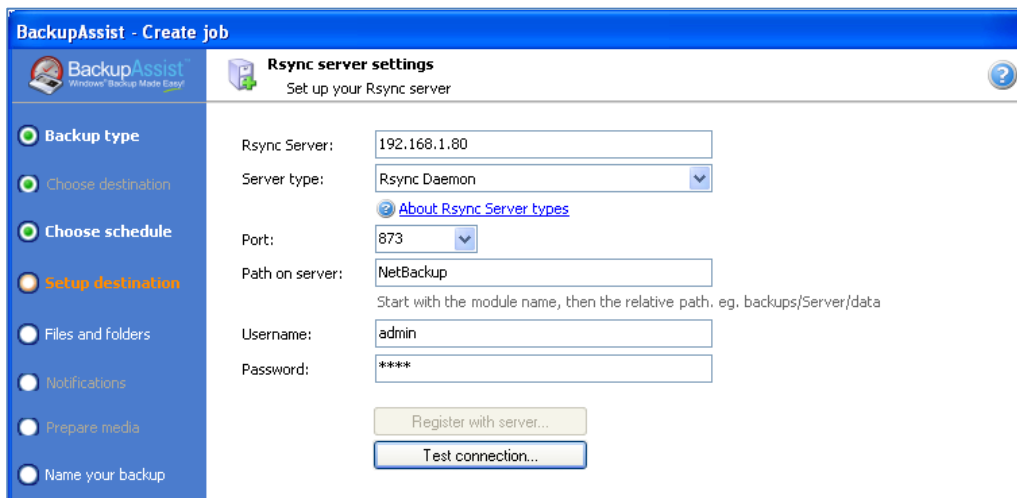
9. To configure the BackupAssist client to use your NAS data host first install BackupAssist v5.1 or later. You will have a free 30 day trial, but beyond this trial period, you will need to purchase a licence for "BackupAssist for Rsync" to continue using it.

10. Once BackupAssist is installed you will need to create a new BackupAssist backup job.

- i. Launch the BackupAssist console and choose File > New backup job from the drop-down menu.
- ii. Select Rsync as the Backup type and then click Next (see screenshot below).



- iii. Enter in your Rsync server name (or IP address), and choose “Rsync Daemon”. This option will not encrypt your data.
- iv. Under “Path on server”, type in “NetBackup”
- v. Then enter in the Username: Admin and Password for this account to access the Synology.
- vi. Click the “Test connection...” button to test communication with the Rsync server. (see screenshot below)



# Troubleshooting and Support

---

## Appendix

**Data host** – the server that has been set up to host backup data

**Client** – the machine that BackupAssist is installed on, that sends data to the data host

**SSH Authentication** – For SSH communication, we use a public / private key method of authentication meaning that you will only be asked for your password once (when registering with the server), and your public key will be uploaded to the server, enabling BackupAssist to log into the server in the future in a secure, password-less manner. For more information on public / private key authentication, visit the following Wikipedia article.

[Wikipedia Public Key Cryptography](#)

**Daemon Authentication** – For Daemon mode, your password is stored in encrypted format by BackupAssist and provided every time the backup runs. When running in Daemon mode, traffic will be unencrypted. For this reason, we recommend that you only use this closed network environments, such as LANs or WANs connected by a secure VPN. Note that VPNs inherently encrypt communication between nodes, so using Rsync in Daemon mode over a VPN is still secure.

## Troubleshooting

**Test connection failed:** Ensure that you are able to ping your Rsync server from your BackupAssist server and you have opened up the appropriate ports on your firewall.

**Register with server failed:** Ensure that you have the correct username and password as setup on your Rsync server.

**When using Rsync over SSH you are repeatedly asked for your password during the 'register' phase:** Ensure that you have removed the 'Deny local logon' entry for your local machine, or in domain policy.

## Support details

Thank you for taking the time to view this Whitepaper. If you have any enquiry about BackupAssist or the Internet Backup add-on please contact us via email: [support@backupassist.com](mailto:support@backupassist.com)