CONTENTS

Network storage

CENTRALISE YOUR STORAGE NEEDS – WE PUT NINE NAS DRIVES TO THE TEST TO FIND OUT WHICH IS BEST

With the price of hard drives plummeting, it doesn't really cost a great deal to fill your home PCs with vast amounts of storage. But, with more homes served by their own wired and wireless networks, there's a better way to store all your music, movies and documents.

What if you want to work on your laptop in the garden? Or sit in the lounge to watch a movie that's stored on your PC upstairs? You could avoid having to constantly copy files to and fro by investing in a NAS device and centralising it all.

NAS drives aren't just about file storage, though. If you need reliable backup, you can set your PCs and laptops to make a daily backup over your home network and keep your most precious data safe and secure.

And, with modern NAS devices boasting iTunes and media servers with increasing regularity, it's also possible to store all your music and movies in a central location, allowing everyone to access files when they want to.

Another benefit is remote access. Several drives here allow you to access them from any internet-connected computer: an ability that opens a whole world of possibilities. Forgotten to copy that document onto your thumb drive? Just log onto your NAS at home and you can get right back on track.

You can even download files using features such as integrated BitTorrent servers, ready for when you get home. And, best of all, you can afford to leave a NAS device on all the time without fearing the arrival of your energy bill. Even the most power-hungry of drives here barely topped a usage of 30W – far less than your average PC.

We've put nine NAS drives to the test, and with prices from £74 to £578 exc VAT, there's something for every budget.

SASHA MOLLER

It might be tempting to throw caution to the wind and set up a specific RAID 0 array or combine a NAS device's multiple drives into one huge data repository, but with such data redundancy it's a choice that's expert many live to regret. Opt for a RAID 1, or better still a RAID 5 array and you can be sure that those hundreds of gigabytes of data are safe and secure, even in the event of a catastrophic drive failure.

Buyer's guide

Plus, the ratings explained

Choosing the right NAS drive for your needs depends on a range of factors. If you just want a centralised point on your network where you can store important files and perhaps your music collection too, you don't need a drive swelling with extensive features. Even the two cheapest models here manage to squeeze UPnP media and iTunes servers into their modest prices, allowing you to copy an MP3 or iTunes library onto the drive and access it from any computer or media-streaming device in your network.

Other factors that come into play depend on whether you need user accounts to help protect sensitive data. If you want to make sure that other members of your household or office can't spy on your documents, it's essential to check that the drive you're buying allows user accounts to be set up. And, if you want to make sure none of those users fill up your hard drive before you've had a chance to use it, look for a model with user quota control – this way, you can limit the storage space each user is allowed to consume.

Once you move up to the pricier models, the list of features becomes more comprehensive. Performance tends to take a turn for the better too, and once you reach the heights of Synology's ds209+ (*see p101*) you're looking at a device that will serve up huge files across a network faster than even USB hard disks could muster. That extra speed can be put to good use, delivering demanding high-definition video across a network or, if a drive has built-in web-hosting capabilities such as the Freecom, Netgear and Synology drives, serving up an entire website.

Another feature of the pricier drives is multiple drive arrays. This allows the use of RAID to provide fault-tolerant operation, meaning that if one hard disk fails you can just pull it out and replace it without losing any of your precious data. Bear in mind, though, while some drives are designed to allow for drives to be swapped by the user, others require the unit to be returned to the manufacturer. Some NAS drives, such as the Netgear and Thecus models, even allow for drives to be hot-swapped: replaced without first turning off the device.

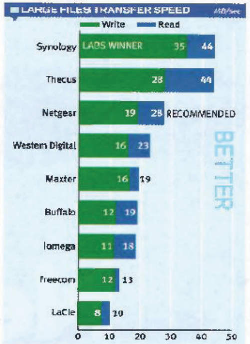
RATINGS EXPLAINED

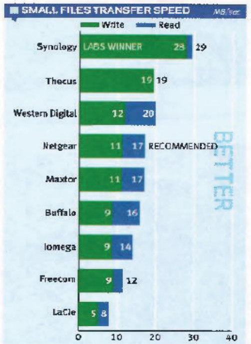
The star ratings you'll find at the bottom of each review are relative only to the products on test in any particular Labs. A one out of six rating doesn't mean the product is the worst of its type to be made, just the least impressive that month. Likewise, a six out of six score isn't necessarily an indication of perfection.

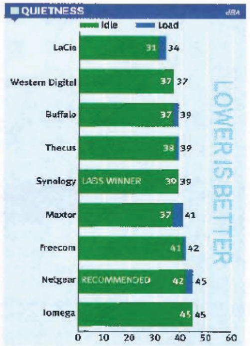
Intertek

INTERTEK

For full results of this month's noise and power consumption testing see the technical reports in the Editorial folder on the cover disc.







Performance

We tested the performance of each drive by timing how long it took to write 3GB of both large and small files to a share and then copy them back again. We carried this out three times for each test and averaged the scores for a final result.

Our test PC featured a 3.16GHz Intel Core 2 Duo E8500 processor, 2GB DDR3 RAM and an 80GB Intel X-25M SSD drive. We connected each drive one at a time to the test PC via a Billion Gigabit switch to ensure no performance bottlenecks.

Quietness

Unlike any other UK magazine, we send every NAS drive to Intertek Research & Testing Centre to find out how noisy they are. Testing is carried out in an acoustically treated listening room using a precision sound-level meter with an "A-weighted" audio filter.

The results are in dBA, but bear in mind they aren't comparable with our usual PC measurements, since recordings are taken at 10cm instead of 50cm in order to obtain a meaningful spread of levels. Full results are detailed in the technical report, which can be found in the Editorial folder on the cover disc.

Features & Design

Drives are also rewarded for their range of functions. Core capabilities such as media, iTunes, print and FTP servers and backup are the most important in the points scheme, but we also take into account extra features, such as user accounts, BitTorrent clients and surveillance camera support.

Drives are also given extra marks for other key features, such as eSata, Wi-Fi, security measures, removable trays and hot-swappable disks.

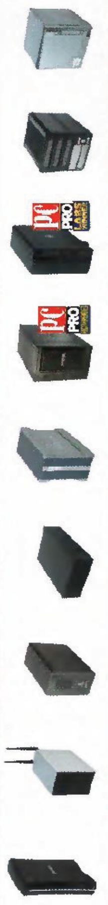
Value for Money

This is calculated using a weighted average of the Performance, Quietness and Features & Design scores; we then factor in the price, including delivery, to give an overall Value for Money score.

Overall

The Overall rating is a straight average of the Performance, Quietness, Features & Design and Value for Money scores.

FEATURE TABLE Network storage



	Buffalo LinkStation Live 500GB	Freecom DataTank Gateway WLAN 2TB	Iomega StorCenter ix2 2TB	LaCie Network Space 500GB	Maxtor Shared Storage II	Netgear ReadyNAS Duo	Synology ds209+	Thecus N3200 Pro	Western Digital ShareSpace 4TB
OVERALL SCORE	★★★★	★★★★	★★★★	★★★	★★★	★★★★★	★★★★★★	★★★★	★★★
Part code	LS-CH500L	29421	34385	301387EK	STM320004SDD20G-RK	RND2000-100UKS	DS209+	OS-NAS3200Pro	WDA4NC40000E
Price [1] (inc VAT)	£130 (£150)	£417 (£479)	£233 (£268)	£74 (£85)	£370 (£426)	£190 (£219)	£340 (£391)	£319 (£367)	£578 (£665)
Price per gigabyte (inc VAT)	26p (30p)	18p (20p)	12p (13p)	15p (17p)	19p (21p)	N/A	N/A	N/A	14p (16p)
Other capacities available	1TB	1TB	1TB	750GB, 1TB	Not available	500GB, 750GB, 1TB	Not available	750GB, 1.5TB, 2.25TB, 3TB	2TB
Price of delivery [2] (inc VAT)	Free	£5 (£6)	Free	£3 (£4)	Free	£7 (£8)	£5 (£6)	£13 (£14)	£5 (£6)
Supplier's website	www.play.com	www.shop.bt.com	www.play.com	www.dabs.com	www.cclonline.com	www.dabs.com	www.scan.co.uk	www.originstore.com	www.cclonline.com
Manufacturer's website	www.buffalo-technology.com	www.freecom.com	www.iomega-europe.com	www.lacie.com/uk/	www.maxtor.com	www.netgear.co.uk	www.synology.com	www.originstorage.com	www.wdc.com/en
Basic warranty	2 years RTB	2yr RTB	2yr RTB	2yr RTB	3yr RTB	3yr RTB	2yr RTB	2yr RTB	3yr RTB
MAIN FEATURES									
Capacity (config)	500GB	2TB (2 x 1TB)	2TB (2 x 1TB)	500GB	2TB (2 x 1TB)	No drives supplied	No drives supplied	No drives supplied	4TB (4 x 1TB)
Speed and buffer	7,200rpm, 16MB	7,200rpm, 16MB	7,200rpm, 32MB	Not stated	7,200rpm, 16MB	N/A	N/A	N/A	7,200rpm, 16MB
Default file system	XFS	EXT3	EXT3	EXT3/XFS	EXT3	EXT2/EXT3	Linux-based	JFS	EXT3
Network protocols	SMB, AFP	SMB, CIFS, HTTP/HTTPS	SMB/CIFS, NFS, SNMP	SMB/CIFS	SMB/CIFS	SMB/CIFS, NFS, AFP, FTP, Rsync, HTTP/HTTPS,	SMB/CIFS, AFP, NFS, HTTP/HTTPS	SMB/CIFS, AFP, NFS, HTTP/HTTPS	SMB/CIFS, NFS
FUNCTIONS									
USB/eSata support	●/○	●/○	●/○	●/○	●/○	●/○	●/●	●/●	●/○
External device support	Printer, hard disk/flash drive	Printer, hard disk/flash drive	Printer, hard disk/flash drive, Bluetooth dongle	Hard disk/flash drive	Printer, hard disk/flash drive	Printer, hard disk/flash drive	Printer, hard disk/flash drive, camera, single card reader	Printers, USB flash memory drive, USB/eSata hard disk, USB webcam, USB wireless dongle	USB flash memory drive, USB hard disk
Media server	● UPnP/DLNA	● UPnP/DLNA (Twonky)	● UPnP	● UPnP	● UPnP	● UPnP	● UPnP	● UPnP/DLNA	○
Print server	●	●	●	○	●	●	●	●	○
FTP server	●	●	●	●	○	●	●	●	●
Web hosting	○	● (MySQL and PHP support)	○	○	○	●	● (MySQL and PHP support)	○	○
User quotas	○	●	○	○	○	●	●	○	●
Managed backups	●	●	●	○	●	●	●	○	○
Timed power-down/startup	●/●	○	○	○	○	●/●	●/●	●/●	○
Hibernate on idle	●	○	○	○	● with latest firmware	●	●	●	●
Other	BitTorrent client	Mail server, BitTorrent client, wireless router	iTunes server, video surveillance IP camera support (Axis)	iTunes server	iTunes server, Drag and Sort	SlimServer, iTunes server, BitTorrent client, ReadyNAS photo server	iTunes server, DDNS, BitTorrent client, Surveillance station (IP camera support), File Station, PhotoStation 3, Download Station 2, Audio Station	iTunes server, DDNS, ISO mounting, BitTorrent client	iTunes server
PHYSICAL									
Ethernet ports	1 x 10/100/1000	1 x 10/100/1000, 1 x WAN	1 x 10/100/1000	1 x 10/100/1000	1 x 10/100/1000	1 x 10/100/1000	1 x 10/100/1000	1 x 10/100/1000, 1 x WAN	1 x 10/100/1000
USB ports	1 x USB	2 x USB	2 x USB	1 x USB	2 x USB	2 x USB (rear), 1 x USB (front)	3 x USB	1 x USB (front), 1 x USB (rear)	2 x USB (rear), 1 x USB (front)
Other connections	○	802.11bg WLAN	○	○	○	○	1 x eSata	1 x eSata	○
Power switch, position	● rear	● front	● rear	● rear	● rear	● front	● front	● front	● front
Front indicators	Power, activity, error	WAN/WLAN	Power, activity	HDD activity	Power, HDD activity/network activity	HDD1/2 activity	Power, status, LAN	Power, HDD 1/2/3 activity, status, LAN, WAN	Power, activity, status, LAN
Dimensions (WDH)	45 x 156 x 175mm	200 x 96 x 124mm	200 x 125 x 80mm	117 x 193 x 45mm	70 x 217 x 136	142 x 101 x 222mm	161 x 88 x 218mm	160 x 170 x 215 mm	196 x 160 x 199mm
SECURITY									
Physical	Kensington lock slot	Kensington lock slot	Kensington lock slot	○	Kensington lock slot	Kensington lock slot	Kensington lock slot	○	Kensington lock slot
Users/groups	●/●	●/●	●/●	○/○	●/○	●/●	●/●	●/●	●/●
Email alerts	●	○	●	○	○	●	●	●	●
CABLES AND SOFTWARE									
Cables	Ethernet cable	Ethernet cable	Ethernet cable	Ethernet cable	Ethernet cable	Ethernet cable	Ethernet cable	Ethernet cable	Ethernet cable
Power	External PSU	External PSU	External PSU	External PSU	External PSU	External PSU	External PSU	External PSU	External PSU
Software	NASNavigator 2, Memeo Backup software	Acronis True Image Home 10	EMC Retrospect HD 2.1 Express backup software	LaCie Ethernet Agent, LaCie Genie Backup Assistant 8	Maxtor EasyManage Software, Backup and Media Server software	RAIDar discovery software, NTI Shadow backup	Synology Assistant, Data Replicator 3	Thecus Setup Wizard, Thecus Backup Utility	WD Discovery tool, WD AnyWhereBackup, MioNet services

Key: ● Yes. ○ No. 1 Price correct at time of going to press. 2 UK mainland only.

Buffalo LinkStation Live 500GB

Good value, but not the quickest performer on test

PRICE £130 (£150 inc VAT)
SUPPLIER www.play.com

Peruse the LinkStation Live's modest specs and there's little to excite at first glance. It boasts a single 500GB, 7,200rpm drive with 16MB cache, and just one Gigabit Ethernet socket and a single USB port at the rear.

Unlike the LaCie, the LinkStation Live has more up its sleeve than just a DLNa-certified UPnP media server and FTP support, though. The USB port isn't only capable of backing up to and from storage devices, including digital cameras and camcorders, but it's also able to share a USB printer over your home or office network. Factor in scheduled backups to USB hard disk, timed power-down/startup, remote web access and a BitTorrent client for managing hefty downloads and you've got a fully featured NAS drive for not much cash.

Initially, we had a few problems with the software not detecting the drive, but a swift reinstall quickly got us back on track. Bundled software includes NASNavigator 2 for detecting the drive on the network and browsing shares, as well as Memeo Backup for carrying out scheduled backups from host PCs.

There are limitations. The single 500GB drive can't compete with the best when it comes to transfer speeds, but it still finds itself well ahead of the LaCie. The Buffalo managed to write 3GB of small files at 9MB/sec and read them back at a reasonably nippy 16MB/sec, while large files were written at 12MB/sec and read back at 19MB/sec.

These won't be major considerations for those looking for a cheap NAS drive. The solid feature set, however, means the LinkStation Live will be a dependable choice for many.

PERFORMANCE	FEATURES & DESIGN	VALUE FOR MONEY
★★★☆☆	★★★★☆	★★★★★

OVERALL ★★★★☆

Freecom DataTank Gateway WLAN 2TB

A NAS drive and wireless router in one, with impressive features

PRICE £417 (£479 inc VAT)
SUPPLIER www.shop.bt.com

Freecom's DataTank Gateway WLAN comes as a welcome change from the legion of dour, black, workmanlike NAS drives.

Look at the rear and the Freecom reveals a unique talent too: a built-in wireless router. Twin antennas provide 802.11bg wireless with support for WEP, WPA and WPA2 encryption. Four Gigabit Ethernet sockets at the rear are complemented by a WAN port for hooking up to an ADSL or cable modem. The WLAN option makes it easy to access files stored on the Freecom from any wireless-enabled PC.

The web interface is a great example, too. Clean design and a sensible menu structure make it easy to navigate the Freecom's myriad options, and also allows users to access and download data stored on the DataTank.

The TwonkyVision media server doesn't come with iTunes support, but the Freecom has very little missing elsewhere. Web hosting is on the agenda, with MySQL and PHP support present, and there's a BitTorrent client.

It isn't perfect, though. The twin 1TB drives provide plenty of storage and RAID0 and RAID1 are supported for striped or mirrored arrays. But replacing a faulty drive requires the unit to be shipped back to Freecom. Performance is a problem too. Transferring 3GB of large files to and from the DataTank saw speeds of just 12MB/sec and 13MB/sec respectively. Small files saw those figures drop even further.

Despite this, it isn't the end of the road for the DataTank: if you can take advantage of its extensive range of abilities and don't mind the sluggish performance, it just about justifies its price tag.

PERFORMANCE	FEATURES & DESIGN	VALUE FOR MONEY
★★★☆☆	★★★★★	★★★★☆

OVERALL ★★★★☆

Iomega StorCenter ix2 2TB

Iomega's latest shows promise, but it's outclassed by others

PRICE £233 (£268 inc VAT)
SUPPLIER www.play.com

Iomega's StorCenter ix2 is the newest addition to its range of NAS drives. Finished in gun-metal grey and housed in a reassuringly weighty metal shell, the ix2 looks like it means business.

With 2TB spread across two 7,200rpm, 32MB cache drives there's no shortage of storage. And these drives can be configured in mirrored RAID1 or JBOD arrays. Performance was disappointing, however. Writing large files saw the ix2 manage just 11MB/sec. Transferring small files proved taxing, with write speeds dropping to 9MB/sec. Read speeds weren't a lot quicker, with large and small files reaching 18MB/sec and 14MB/sec respectively.

The ix2 goes some way towards making up for its deficiencies by virtue of its ease of use. Installation was rapid and the web interface clear. A dashboard on the web interface's front page gives a quick overview of disk usage and lists connected USB devices. The twin USB ports at the ix2's rear support storage drives, printers and even some Bluetooth dongles.

Elsewhere, the ix2 boasts FTP, iTunes and UPnP media servers, and there's also Axis support for direct recording from IP security cameras. EMC's Retrospect HD comes bundled to deal with workstation backup.

Iomega gave us access to a unit running the latest beta firmware that adds AFP protocol support, remote access, DDNS and a BitTorrent server, and these improvements will be available by the time you read this.

Despite this, the StorCenter ix2 is unremarkable. Performance is average, and other drives such as Netgear's Duo offer more comprehensive features for slightly more cash.

PERFORMANCE	FEATURES & DESIGN	VALUE FOR MONEY
★★★☆☆	★★★★☆	★★★★☆

OVERALL ★★★★☆

JARGON BUSTER – RAID

RAID is an acronym that stands for Redundant Array of Inexpensive Drives. It crops up with unerring regularity in any discussion of NAS drives, as well as storage in general.

In practice, RAID allows multiple hard drives to be combined in a variety of ways to help improve data security, transfer speeds or a combination of both. There are a multitude of weird and wonderful types of RAID arrays, but the principal ones are worth knowing about.

JBOD

JBOD, or Just a Bunch of Disks, combines multiple drives into one giant drive. It isn't strictly speaking a RAID scheme.

RAID0

RAID0, or striping, spreads the data between multiple drives. This results in improved read speeds, while allowing all the hard drive space to be used. If one drive fails, however, all data is lost.

RAID1

RAID1, or mirroring, creates an identical copy of your data on all drives. The benefit is that all but one of the drives can fail and still be replaced without any consequent data loss. The downside is that the total storage is reduced to the total capacity of just one of the drives.

RAID5

RAID5, or striping with parity, requires three or more drives and, to some extent, combines the benefits of both RAID0 and RAID1. Read speeds are improved and any one of the drives in a three-strong array can fail without data loss. It's also more storage-efficient than RAID1 since the total storage capacity is only reduced by one drive.

Make the most of multiple hard drives by combining them into a RAID array.

LaCie Network Space 500GB

Inexpensive, but a frugal assortment of features

PRICE £74 (£85 inc VAT)
SUPPLIER www.dabs.com

LaCie's Network Space is about as no-frills as NAS drives come. Its minimalist, glossy black exterior is as featureless as the drive it conceals.

Its rectangular black chassis houses a single 500GB drive, with one USB socket to add to the single network port.

That USB connection can be used to copy the contents of an attached USB storage device, or backup the drive's contents to another drive. Other backup options come courtesy of the supplied Genie Backup Assistant software. Its simple interface offers full, incremental or mirror backup strategies as well as compression, encryption and scheduling options.

Cast an eye over the Network Space's stylish and stripped-down web-interface and it's clear how LaCie has kept the price so low. There's a UPnP media server, an iTunes server and support for FTP access, but that's about it.

Performance was the slowest of the drives on test here. Copying 3GB of large files saw the Network Space manage write speeds of just 8MB/sec, and reading them back was only slightly quicker at 10MB/sec. Small files pushed the transfer speeds yet lower, with the LaCie achieving read and write speeds of 8MB/sec and 5MB/sec respectively.

It's one of the quietest and most power-efficient drives on test. Its petite frame means that there isn't room for a fan; instead, the drive relies on its perforated underside to keep cool, and power usage never topped 10W.

That's not enough to save this drive from mediocrity, though. It might be keenly priced, but its frugal assortment of features and poor performance leave it trailing the pack.

PERFORMANCE	FEATURES & DESIGN	VALUE FOR MONEY
★★☆☆☆	★★☆☆☆	★★★★★

OVERALL ★★★☆☆

Maxtor Shared Storage II

Plenty of storage, but average performance and limited features

PRICE £370 (£426 inc VAT)
SUPPLIER www.cclonline.com

Maxtor's Shared Storage II emerged victorious from the NAS group test in our February 2007 issue and, remarkably, it's still available to buy. The burning question is whether it can still cling to the top spot.

Back then, the 1TB model would have cost £431 exc VAT, but now the 2TB version costs just £332 exc VAT. And with two 1TB drives in-situ, the Maxtor is capable of configuring the drives in a RAID0 or RAID1 array. However, the sealed unit means replacing faulty drives requires the unit to be returned to Maxtor.

Two USB ports at the rear support the sharing of both printers and storage, and the Maxtor's contents can also be easily backed up to an external hard drive.

Performance looks decidedly middle-of-the-road against today's competition. Reading and writing large files saw the Shared Storage II manage a competent 19MB/sec for the former and 16MB/sec for the latter, while taxing the drive with small files saw the figures fall to 17MB/sec and 11MB/sec respectively.

There's a UPnP media server along with an iTunes server, but not a lot else. The Drag and Sort feature is handy – deposit multiple files onto a shortcut icon on your Windows desktop and the Shared Storage II will separate them into music, photo and document folders.

However, there's no support for FTP transfers, no web hosting and, while user accounts are supported, there's no facility for enforcing user quotas. At this price, we'd expect more. For very close to the price of the Maxtor, you could purchase the more capable Netgear and two 1TB drives to go with it.

PERFORMANCE	FEATURES & DESIGN	VALUE FOR MONEY
★★★★☆	★★★☆☆	★★★☆☆

OVERALL ★★★☆☆

If you're sold on the idea of buying a NAS drive for your home, then chances are you might also be interested in alternatives such as the Windows Home Server (WHS) device.

There are some broad similarities between the two. Both are capable of acting as centralised repositories for data of all kinds, from music and movies to photos and documents. As they're designed to hang off a network they make it really easy to access the files you want and, best of all, wherever in the home you wish to access them.

Splitting hairs

There are subtle differences, however. Both NAS and WHS appliances have their own operating systems that keep them ticking over, present the web interface, and help shunt all that data to and fro. But while NAS drives find themselves running specially tailored Linux installations, a Windows Home Server box is basically a PC running a modified version of Microsoft's Windows Server 2003 SP2. Unlike a PC, WHS is designed to run headless – without a monitor, keyboard and mouse dangling out of it. Pop a WHS box in a cupboard, and you both install and configure it from another PC on the network via a Remote Desktop session.

But while the operating system and hardware configuration alone shouldn't matter to you that much, the subtle differences could end up pushing you towards one or the other. Several of the NAS boxes here, for example, allow users to access their contents as well as their extra features – such as surveillance cameras and BitTorrent clients – from any internet-connected PC, but WHS goes one step further. Users can use any internet-connected PC to access data and upload new files, but it's also possible to use a Windows Home Server as a Remote Desktop Protocol gateway – a service that allows you to access any PC on your home network.

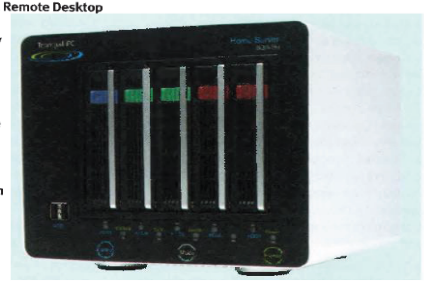
Stay safe

There are other benefits too. Many NAS drives are capable of scheduled backups to an attached USB or eSata drive, but they rely on bundled software to back up data from a single client PC on the network. Windows Home Server, on the other hand, is capable of backing up data from up to ten PCs – simply install the Windows Home Server connector software and it leads you through the simple process on each connected PC. And, in a friendly nod to your energy bills, Windows Home Server is even able to wake your home PCs from standby and put them back to sleep again once it's completed its backups.

Storage sees the two camps diverge yet again, however. Where the NAS drives use RAID functions to combine multiple drives for fail-safe data storage, Windows Home Server has a slightly different approach. Every hard drive attached or added to the Windows Home Server, whether internal SATA, IDE, eSata, USB or FireWire, is combined into one single data repository. For security's sake, Windows Home Server also allows the user to specify which folders are duplicated. This means that while you can ensure that your documents and photos are saved on multiple drives, you can choose that television recordings aren't and save a hefty amount of disk space in the process. The ability to customise what is and isn't backed up is an inarguable boon, but whether it's genuinely a more robust and sensible approach than a fault-tolerant RAID5 array is open to debate.

Serving up

Despite the undeniable strengths of WHS, an inexpensive NAS drive is a sensible and versatile starting point. Take the likes of Netgear's ReadyNAS Duo: it offers many of the benefits of Windows Home Server – remote access, centralised storage, backup, media serving and so on – but adds capabilities such as support for AppleTalk and web hosting to the list for just £169. Windows Home Server is great for those who want to manage more serious hobbyist setups, but for now, and for the average user, we'd say NAS just edges it.



Tranquil's SQA-5H Windows Home Server device is very capable, but a NAS drive may do the job just as well.

Netgear ReadyNAS Duo

A comprehensive set of features and good performance

PRICE £190 (£219 inc VAT) without disks
SUPPLIER www.dabs.com

Netgear acquired Infrant's range of NAS devices back in early 2007, but it hasn't thrown the baby out with the bathwater, retaining a similar look and feel for its newer devices. The twin-bay Duo is one of these and boasts a host of attractive features.

While the diskless ReadyNAS Duo may cost significantly more than the Buffalo or LaCie drives, it isn't without good reason. The Duo's metal frame helps it to feel incredibly sturdy and well built. It isn't just for show, either.

Installation requires the user to secure each hard disk in a removable caddy with four screws, but once done the drives slide in and lock into place. Removing drives is simply depressing a button and sliding them out. This means hot-swapping of drives is on the agenda. There's no RAID0 or other RAID options as Netgear's own X-RAID technology mirrors the drives in a two-disk array, so it isn't a problem.

Performance isn't up with the Synology, but considering the price differential it isn't far behind. The chassis was fitted with two Seagate Barracuda 7200.10 drives giving speeds of 19MB/sec and 11MB/sec for large and small files. Read speeds soared to 28MB/sec for large files and 17MB/sec for small files.

The web interface is simple, with clear information about relevant sections. There are iTunes, UPnP media and print servers, and you get the facility for user accounts, user quotas and the capability to dabble with web hosting.

At this price, the ReadyNAS Duo is a bargain. It isn't quite the fastest, or the most fully featured, but for all-round performance at a mid-range price it's very hard to beat.

PERFORMANCE	FEATURES & DESIGN	VALUE FOR MONEY
★★★★☆	★★★★★	★★★★★

OVERALL ★★★★½

Synology ds209+

Expensive, but the ds209+ is very fast – NAS to aspire to

PRICE £340 (£391 inc VAT) without disks
SUPPLIER www.scan.co.uk

Synology's ds209+ is one of the dearest NAS devices on test and it's also the only one that isn't available with drives preinstalled. Extricate the ds209+ from its packaging and there isn't much of a clue as to why it's so very expensive.

The chassis is made from insubstantial black plastic, and there's no removable tray system for quickly replacing failed drives. Setup isn't simple, either – you have to transfer the Linux kernel before you can even start setting up the hard disks in a RAID array, or as a pair of single drives.

Once the Synology is up and running it's impressive. The web interface is well presented and, despite the myriad options, easy to navigate. It's even possible to drag the icons of your most used options into a quick-start bar.

And, when it comes to features, the ds209+ has few peers. eSata and USB ports allow external hard drives and printers to be shared over the network, and there's also support for IP cameras thanks to the Surveillance Station.

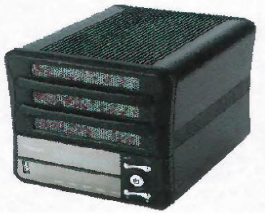
You also get web hosting, iTunes and UPnP media serving, a BitTorrent client that supports Usenet (.NZB) files, and a comprehensive range of remote access functions.

It's fast too. Fitted with a pair of 500GB Western Digital 5000AVJS drives, the Synology wrote at 35MB/sec for large files and reading was even faster at 44MB/sec. Put performance-oriented drives such as WD Raptors in there and you can expect even more.

So, while it lacks the hot-swap capabilities and rugged build of the Netgear and Thecus, when it comes to features and performance the Synology is in a league of its own.

PERFORMANCE	FEATURES & DESIGN	VALUE FOR MONEY
★★★★★★	★★★★★★	★★★★★★

OVERALL ★★★★★★



Thecus N3200 Pro

A fast, sensibly designed three-bay NAS device with RAID5

PRICE £319 (£367 inc VAT) without disks
SUPPLIER www.originestore.com

The price at the top of the page is for the diskless version, but Thecus provided us with a 1.5TB unit populated with three 500GB Western Digital Caviar Green drives, sensibly mounted in a RAID5 array. RAID5 allows any one of the drives to fail without data loss; RAID0, 1 and JBOD are also supported.

Hot-swapping of drives is quick and easy. Unclip the front fascia, unscrew two spring-mounted screws, and drives are free to simply slide out. Installation is tool-free.

Performance was among the best in the group. Large files gave read and write speeds of 44MB/sec and 28MB/sec, while small files saw the N3200 Pro manage 19MB/sec and 19MB/sec respectively. Power draw was modest too, with the N3200 Pro consuming 25W at idle and 32W under load.

It isn't short on features, either. You get UPnP and iTunes support along with print and FTP servers. The front USB port allows for the contents of external drives to be copied to a preset folder, and two more at the rear allow further storage and a printer to be added. You can connect a USB wireless dongle, plus there's an eSata port and a WAN port alongside the Gigabit Ethernet socket.

Thecus' N3200 Pro is a fine consumer-friendly NAS device, only pipped to the post by Synology's superior web-interface and slightly more comprehensive feature set. However, with RAID5 offering a good balance between performance, security and optimal storage space, and the tool-free drive installation, some may find the Thecus' talents better suit their requirements.

PERFORMANCE	FEATURES & DESIGN	VALUE FOR MONEY
★★★★½	★★★★½	★★★½☆

OVERALL ★★★★½

Western Digital ShareSpace 4TB

Oodles of storage and middling performance, but found lacking

PRICE £578 (£665 inc VAT)
SUPPLIER www.cclonline.com

Western Digital's ShareSpace is a capacious four-drive NAS appliance aimed at the home or small office.

But despite its size, the four disks and sizeable fan, the ShareSpace is a fairly quiet and efficient unit. The 80mm fan goes about its business unobtrusively, and an idle power draw of just 31W compares favourably with its rivals.

The four 1TB Western Digital GreenPower drives in the review unit were installed in a RAID5 array as standard. RAID5 combines the performance benefits of RAID0 with the safety of RAID1. Any one of the drives can fail without data loss.

There's no facility for hot-swapping drives, but replacing them is straightforward: you just slide out the failed drive, attach the plastic caddy to the new drive and slot it back in. But you're limited to Western Digital drives only.

While the ShareSpace might not be the fastest NAS drive here, it's far from sluggish. Large files were written to the drive at 16MB/sec, and reading them back saw that figure rise to 23MB/sec. Small files were more challenging, but write and read figures reached 12MB/sec and 20MB/sec respectively.

Media-buffs will be disappointed by the rather mean provision of an iTunes server and little else, but the ShareSpace does have good support for user accounts and quotas, and the integrated MioNet service allows for remote access to files and folders.

But while this is enough to gain the ShareSpace a good Features & Design score, elsewhere it isn't quite quick enough or cheap enough to grab itself an award this month.

PERFORMANCE	FEATURES & DESIGN	VALUE FOR MONEY
★★★☆☆	★★★★☆	★★★☆☆

OVERALL ★★★☆☆