BackupAssist™
Windows® Backup Made Easy!

Survey of backup devices (v1.0, 15 May 2009)

| Device class	Specifics	Approximate Price (USD)	Imaging speed (GB/hr)	Av File Copying speed (GB/hr)
3.5"eSATA External Drive	Server HDD in Astone case	$155.00	280	192
	Server HDD in Channel+ case	$150.00	290	191
	WorkStation HDD 1 in Astone case	$85.00	163	136
	WorkStation HDD 1 in Channel+ case	$80.00	163	140
3.5"USB External Drive	Server HDD in Astone case	$155.00	101	90
	Server HDD in Channel+ case	$150.00	101	90
	WorkStation HDD 1 in Astone case	$85.00	102	90
	WorkStation HDD 1 in Channel+ case	$80.00	100	90
2.5" USB Portable HDD	Lacie Little disk (250GB)	$70.00	96	88
	Seagate Freeagent GO	$56.00	91	85
RDX drives	Tandberg rdx Quikstor SATA	$147.00*	108	129
	Tandberg rdx Quikstor USB	$269.00*	71	71
Internally connected SATA Drive	Server HDD	$130.00	253	196
	WorkStation HDD 1	$60.00	173	165
	WorkStation HDD 2	$81.00	189	181
	2.5" Laptop HDD	$121.00	253	208
Tape drives	HP LTO-1 (external SCSI)	$1499.00	N/A	53
	Quantum DLT-4 SATA	$1100.00	N/A	35

Key Recommendations

- USB vs eSATA: choose eSATA if possible. However, with the speed of differential backups in the Imaging and File Copying backup software, after the initial backup is performed, there will be little difference in speed in most practical scenarios.

- If choosing USB – the device speed makes little difference. The USB interface causes the bottleneck.

- eSATA is as fast as internally connected SATA, within normal tolerances and variations.

- We do not believe that the type of enclosure makes a difference to backup speed. We recommend choosing an enclosure based on robustness, reliability and price.

- Both USB and eSATA may run into drive letter assignment problems, so make sure that your backup software caters for these issues.

- Laptop HDDs are surprisingly fast.

Backup Software Used

BackupAssist v5.2.3 (running on Windows Server 2008) was used to for all test scenarios. BackupAssist provides support for Windows Server Backup (Microsoft's Block Level Backup Engine). It also includes its own File Replication engine for straight File Copy backups (a more sophisticated Robocopy). The same settings were used for each backup run.

VSS Snapshot times were subtracted from the overall backup time, and the backup devices were formatted before each trial. Tape drive speeds were obtained using BackupAssist's soon-to-be-released tape drive engine.

Drive Imaging tests: carried out using Windows Server Backup (built-in block level backup engine in Server 2008)
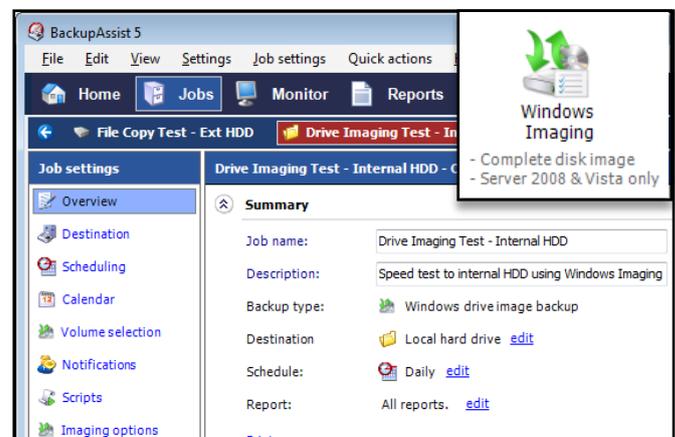
File backup tests: carried out using the BackupAssist File Replication engine, which copies an exact replica of selected files and folders to a disk-based backup device.
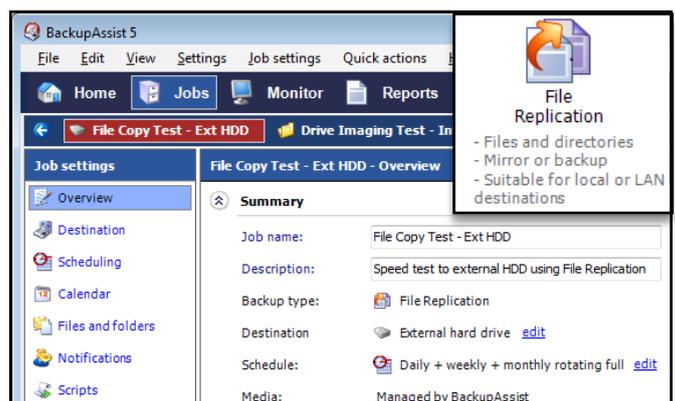
Test Environment / Hardware Used

Test machine

- **Operating system**: Windows Server Standard 2008 with Service Pack 1.
- **Processor**: Intel Core2 Duo E7400
- **Motherboard**: ASUS P5KPL-CM
- **Ram**: Kingston 4GB DD2
- **OS host HDD**: Seagate Barracuda 250GB 7200rpm
- **Data host HDD**: Seagate Barracuda 250GB 7200rpm
- **SCSI card**: Adaptec SCSI Card 29160LP

All external and internal devices were connected to onboard ports of the motherboard, except for SCSI tape devices.

Backup hardware used

Cases

- Astone USB/SATA HDD enclosure
- Channel+ USB/SATA HDD enclosure

Internal hard drives

- Server HDD = Western Digital WD10EADS SATA HDD (7200rpm, 32MB cache)
- WorkStation HDD 1 = Western Digital WS1600JS SATA HDD (7200rpm, 8MB cache)
- WorkStation HDD 2 = Samsung HD161HJ SATA HDD (7200rpm, 8MB cache)
- 2.5" Laptop HDD = Seagate Momentus 7200 0.3 SATA HDD (7200rpm, 16MB cache)

External hard drives

- Lacie Little disk (5200rpm, 8MB cache)
- Seagate Freeagent GO (5200rpm, 8MB cache)

Tape drives

- HP Ultrium 232 LTO 1 – External SCSI
- HP Ultrium LTO2 – External SCSI
- Quantum DLT -4 – Internal SATA

RDX drives

- External Tandberg Quikstor USB with 160Gb cartridge (5200rpm)
- Internal Tandberg Quikstor SATA with 160Gb cartridge (5200rpm)

Full whitepaper

For the full **Backup Device Speed Testing** whitepaper visit
http://www.backupassist.com/education/whitepapers.html

About BackupAssist – Slash costs and simplify your backup & DR system

BackupAssist is the backup software designed for small and medium business – affordable, reliable and priced from just US$249. With solutions for imaging and file backup, both local and Internet-based backup, the ability to back up everything from individual files to complete servers (including Active Directory, Exchange and SQL), and support for a wide range of backup devices, BackupAssist is unmatched for its flexibility and versatility.