

Streamers from £250 to £4000

COMPARISON

OF TAPE DRIVES

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Tape drives, so-called streamers, are still the backup medium of choice. Value for money and with a large capacity, they have maintained their position for decades. We tested a representative sample of a few of the current models.

In the lab, Linux Magazine used an IDE-Raid, in order to feed data to the streamers at the highest possible speed. The data content consists on the one hand of easily compressible files (sources from the latest SuSE distribution), and on the other hand

of hard-to-digest MPEG videos. The data mix on the lab Raid is a fairly good reflection of the reality of a corporate server.

The capacity details of the drives are uncompressed, thus guaranteed, values. The usual 2:1 or even 4:1 assumptions of the manufacturers are unrealistic fantasy values, and under no circumstances should you rely on them.



bild1.jpg
Figure 1: The Tandberg drive is robust and fast

Tandberg SLR-60

Tandberg, with its SLR devices, relies on the tried and tested system of linear recording. The principle is identical to QIC, but as the result of refined mechanisms and fully automatic recording controllers with read-after-write, Tandberg offers data security which is bang up to date.

The drive (Figure 1) stands out because of its great robustness, and even the cassettes do not have the fragility of DAT cartridges and will cheerfully put up with rough handling. The drive has a wide SCSI connection and 8MB buffer.

Tandberg SLR-60

Capacity: 30GB
Back up rate: 210MB/min
Price: approx. £1200
<http://www.tandberg.com>

Tandberg SLR-60 Autoloader

The speedy Tandberg (Figure 2) also comes with automatic changers. The rig costs just under £4000, but for this you also get 180GB uncompressed

Extending the reach of SCSI devices

There are many solutions for getting the data onto the backup device. As well as dedicated backup servers there is also the option of running several SCSI devices on one server and to extend the range of the SCSI interface so as to distribute the locations of the devices.

One product this would be possible with is the Storage Net SCSI-Extender from Storagetek. With this device, the very short length of the cable of the SCSI can be extended to an impressive 20km, if a length of fibre-optic cable is used. When WAN networking is used, it is even possible to achieve 200km. Both backups on streamer drives and also disk and Raid reflections can be done via the wide SCSI connections thus obtained, and at the same time the mirror images – accommodated in separate buildings – even guarantee fire protection.

<http://www.storagetek.com>

Standards: SCSI, Wide and Ultra-SCSI.

BACKUP HARDWARE

FEATURE

capacity. In the extremely long housing, tapes are inserted very practically with the aid of a cassette holder, so you can change a set of six tapes at a stroke. This turns the archiving of even huge quantities of data into affordable child's play.

At twelve seconds change time, nor does it take an eternity to change a tape, and the back up rate is identical to the single drive.

Tandberg SLR-60 Autoloader

Capacity: 180GB
Tape change rate: 12 s
Back up rate: 205MB/min
Price: approx. £4000
<http://www.tandberg.com>

Ecrix VXA-1

VXA (Figure 3) from the US manufacturer Ecrix uses a new tape cassette. This contains a tape, which is threaded into the drive where it is helically recorded, just like with DAT or Exabyte. The broad tape gives the impression of being markedly more robust than DAT media. The drive processor has to manage with an input buffer of just 512K. Ordinary server hard drives have more to offer than this.

In the test, though, the drive proved to be really fast: 201MB/minute is a decent figure.

VXA-1

Capacity: 33GB
Back up rate: 201MB/minute
Price: approx. £800
<http://www.ecrix.com/>

Ecrix VXA Autopak

Ecrix also manufacture VXA drives as autoloaders. The devices, called Autopaks (Figure 4), offer ample space. The tested device has 15 slots for cassettes, so that the capacity is 495GB uncompressed. This means that it can be used to back up even larger server environments.

The speed is practically the same, but can be doubled by having a second drive in the changer. In the test it was 198MB/minute, as the result of the time it takes to change tapes.

VXA Autopak

Capacity: 495GB
Tape change rate: 13 s
Back up rate: 198MB/minute
Price: approx. £3500
<http://www.ecrix.com/>

Travan NS 8

Travan Network Storage uses the Seagate NS-8 as drive, which still shows clear signs of the Conner past (Figure 5). The Travan drive stands out because of its low price. But do not expect any three figure



[left]
Figure 2: The autoloader from Tandberg offers cassette holders

[right]
Figure 3: VXA uses new style cassettes and makes helical recordings

back up speeds for this. On the other hand, this drive has nothing whatsoever in common with the leisurely ways of earlier QIC floppy streamers.

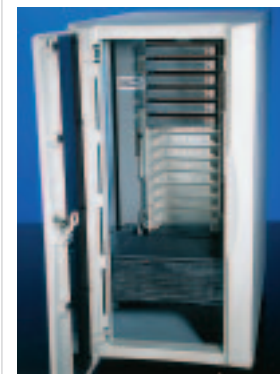
In the Linux Magazine Test it bulldozes away at 39MB a minute, a figure at which an individual server can certainly be backed up on tape in an acceptable time. When installing you need to take care that the computer is not too exposed, because the Travan cassette protrudes out of the drive by three centimetres. If it gets pulled out during the save, that's the end of your backup

Travan NS 8

Capacity: 4GB
Back up rate: 39MB/minute
Price: approx. £250
<http://www.seagate.com>

[above]
Figure 4: Autopak is the name of the robotic changer from VXA. It offers a spacious 495GB

[left]
Figure 5: Travan offers acceptable speed at a low price

**Bigger libraries**

Just before going to press, the Linux Magazine was sent details on Storage Technologies' new tape library L20 (<http://www.storagetek.com/products/tape/L20/>). This device was conceived as the entry-level model in the L-series, and provides exceptionally high capacities.

It starts off with 10 or 20 slots. Even with these, a respectable 2TB can be safely stored uncompressed. The bigger models with up to 80 cassettes and a maximum of eight drives can even put away 8TB without compression. The speed is remarkable: According to the manufacturer it is 920MB per minute for uncompressed files and tape drive. These enormous quantities are managed via a built-in Web interface.

The tape formats used are DLT 1, 7000, 8000 and Super-DLT. LTO Ultrium can also be processed. The devices include a standard barcode reader for secure identification of the tapes. Apart from the SCSI-3-LVD connection, the (optional) high-speed interface fibre channel is also interesting.