

Why Tape Doesn't Work

Tape doesn't belong in any serious backup strategy if an alternative can be found. In, some cases the cost of tape per Gigabyte of storage can't be beat. But the cost savings are often artificial when you consider the massive amount of human effort wasted struggling with tape backup or restore that doesn't work. Consider the following general problems with tape and tape drives:

- Tape is slow and often difficult to restore from. Tape is not "random access" media.
Gartner's statistics say the 70% of tape backup restorations fail & and on average only 60% of the information is able to be restored.
- Tape is extremely sensitive to dust and dirt commonly found in today's non-filtered server rooms.
- Tape is basically magnetic particles on a flimsy polyester base film. The base film is subject to stretching, expansion and breakage. With the tight tolerances required of the read/write heads a normal tape can stretch and easily cause errors when reading or writing data.
- Tape is exposed to air and the moisture and contaminants in the air. Tapes are not hermetically sealed as is the case with hard drives.
- A tape cartridge exposed to any serious high temperature is in danger of melting. There are many cases of hard drives surviving fires and having data recovered.

In the real world, I have observed that good tapes are reliable for no more than about 50 uses. Technologies such as Travan or DAT won't even last that long.

- Different software uses different formats to write to tape. So, for example, a tape written to using Computer Associates Brightstor cannot be expected to be read using even the same tape drive with Veritas Backup Exec software.

Tapes written on one drive often fail to read on another drive (even if the second drive is the exact same model and manufacturer). It is often explained this is due to differences in "head alignment".

- Tapes written on higher capacity drives (for example, 40GB) cannot be read on lower capacity drives (for example, a 20GB drive).
- Tape Shelf life is a guess. Some experts state that generally magnetic tape "lasts" anywhere from ten to sixty years. The principal means to prolonging tape life is to maintain an appropriate player, to keep original materials in stable, cool and dry storage conditions and to strictly limit the use of original materials.

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