

Tape rotation techniques

1 Grandfather-father-son

One of the most common methods of media rotation, this system uses three sets of tapes for backing up data daily, weekly, monthly and quarterly.

Terms used in GFS

Daily incremental backup (son)

There are four daily tapes labelled with the days of the week Monday to Thursday or something similar. You re-use these tapes every week for partial backups on the day specified by the label.

Full weekly backup (father)

There are up to five weekly sets of tapes labelled with the weeks from 'Week 1' to 'Week 5' or something similar. You re-use these sets every month for full backups each week on the day (normally Friday) on which you do not do a daily incremental backup.

Full monthly backup (grandfather)

There are three monthly sets of tapes, labelled 'Month 1', 'Month 2' and 'Month 3' or something similar. You use these sets for full backups on the last school day of each month, and every quarter you re-use the sets.

Example rotation scenario

The following table shows a possible grandfather-father-son tape rotation scenario for a single month.

Month 1				
Monday	Tuesday	Wednesday	Thursday	Friday
				Week 1
				Week 2
				Week 3
		Wednesday	Thursday	Week 4
Monday	Tuesday	Month 1		

The shaded areas represent previous backups, while the white areas represent the most recent backups. In this single month scenario, only the weekly backup tapes have been reused.

The GFS method as described allows for a data history of two or three months, which for many schools is adequate. If you need data archiving, you may pull tapes from the rotation, store those off site and replace the stored set with new tapes.