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Challenges of repack in the era of the high-capacity tape cartridge

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The latest tape hardware technologies (LTO-9, IBM TS1170) impose new constraints on the management of data archived to tape. In the past, new drives could read the previous one or even two generations of media, but this is no longer the case. This means that repacking older media to new media must be carried out on a more aggressive schedule than in the past. An additional challenge is the large capacity of the newer media. A 50 TB tape can contain a vast number of files, whose metadata must be tracked during repacking. Repacking an entire tape also requires a significant amount of disk storage. At CERN Tier-0, these challenges have created new operational problems to solve, in particular contention for resources between physics archival and repack operations. This contribution details these problems and describes the various approaches we have taken to mitigate and solve them. We include a roadmap for future repack developments.

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