GridKa Tape System: Monitoring and Failure Analysis

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Motivation:
- GridKa Tape System comprises lots of components
- All components log failures and statistical data
- Correlation of logged data laborious and ambiguous
- A single defective drive or cartridge can silently put data on many other cartridges at stake
- The longer it takes to identify and isolate a defective component the more extensive is the damage

GridKa Tape Environment:
- Tape Libraries: Oracle SL8500
- Tape drives: 40 T10K C&D
- 10000 cartridges T10K
- 20000 LTO cartridges migrated to T10K
  - No loss of data
- Tape Movers
- Metadata Server

Conclusions and Outlook:
- GridKa tape system monitoring has been significantly improved over the years
- Identified strange behaviour of some drives, it proved to be the so called „stuck roller“ problem
- Back in 2016 identified a malfunctioning drive which wrote data „inefficiently“ on some tapes
- About 2000 cartridges were affected by the above mentioned drives
- Further improvements: background data integrity verification

GridKa Tape Occupancy per Month

Perl-Scripts

Drive_GridKa_01: errors with 3 tapes; Inspect the drive; Drive fault 75%
TA5623: errors in 3 drives; Move the data; Media fault 90%
121 empty tapes; Currently 7 tapes/day