STEP09:
Take me to your tape robot...

Graeme Stewart

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University of Glasgow | Department of Physics & Astronomy

Tape Usage: The Computing Model View

1. Write RAW data from CERN to DATATAPE
2. Write all products from T1 reprocessing to DATATAPE
3. Write merged HITS to MCTAPE
4. Write reconstructed outputs (AOD, DPD, RDO) to MCTAPE

Rates 1: RAW Data

- RAW data rate is 1.6MB x 200Hz x 14 hours
- For a 10% Tier-1 this is 1.6TB/day
- Can be written to tape over 24 hours:
  - 1.6TB / 24 Hours = 18.6MB/s

Rates 2: Reprocessing

- Reprocessing rate is 5x data taking rate
- Each RAW file (1.6MB) produces ESD (1.0MB), AOD (0.2MB) and DPDs (0.4MB)
  - Thus 1.6MB of output
- Read rate is 18.6x5 = 93MB/s
- Write rate is 93MB/s

Rates 3: MC Production

- MC09: 0.9B G4 and 2.2B Atlfast in 200 days
  - 1840 TB to tape in 200 days of 24 hours is 106 MB/s
  - 10% Tier-1 should write steadily at ~10 MB/sec

Rates 4: Reprocessing

- Reconstruction is bursty: estimate 5x HITS production rate at peak
- Read rate is 5x10MB = 50MB/s
- Each HITS file produces ~same outputs (RDO, AOD)
- Write rate is 50MB/s

Peak Rates (10% T1)

	Read	Write	Grand Total
1. Raw data		18	
2. Reprocessing	93	93	
3. MC data		10	
4. Reconstruction	50	50	
Total	143	171	314

Monitoring

- We have activity based monitoring
  - *And targets for STEP09*
- But Tier-1s need to also monitor their performance
  - Tape problems are very time consuming for us to spot behind SRM
- We are told that tape systems are cleverer than us and we should not worry about them :-)