

Tapeless Archiving

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- Recall the reasons for replacing the DLT tape archiving system:
 - Each DLT costs \$50 for 30 GB of storage.
 - So far, only Crab tapes have been read on a regular basis. Lots of tapes collecting dust.
 - No manpower/system to process the data on tape.
- The proposed system:
 - REC data transferred over the network to 2 sites.
 - Crab data transferred on portable media
 - Large buffer of GRB data saved, can be mined for interesting events as needed.

Equipment needed

- At the site:
 - 3 – 3.5 TB disk arrays (11.5K\$/each)
 - 2 – Computer servers (1.5K\$/each)
 - Serve disk, and provide CPU for data mining.
 - UPS, others. (~2-3K\$)
- At LANL:
 - 2 – 3.5 TB arrays/year for Crab/REC data (11.5K\$/ea)
- At UMD:
 - 2 – 3.5 TB arrays/year for Crab/REC data (0 k\$)

Cost vs. DLT for a Data Year

- DLT's cost:
 - \$50/ea x 3.5 tapes/day x 365 day x 1.5 (OH)
 - Cost: 96K\$ / year.
- Disk system- Year 1:
 - Need to buy initial 3 disk array buffers, spares, UPSs to be located at the site.
 - Initial cost of 65K\$ (OH-free)
- Disk system – Following years:
 - Need 2 additional disk array for LANL 2nd data location: 25K\$/year

What happens to the data streams?

- REC- **Unchanged.**
 - Two copies (UMD and LANL) will continue.
- Crab- **Faster availability.**
 - Raw Crab files transferred by portable media from site to LANL then copied to UMD.
- GRB- **Buffered at site for ~2 months.**
 - Allow time and provide computers for reprocessing data in response to problems, and time to extract raw data from new potential sources.
- Save – **Data stream stopped.**
- Sun, Moon, Mrk, etc – **Data streams stopped.**
 - See GRB comment.

Work needed to be done.

- Buy and install needed equipment.
 - Large purchase, can be slow at UMD
 - Ship and install at site
- Modify archiving scripts to write data to multiple disk arrays.
 - Need to remove oldest file when disks are full
- Crab data transfer method needs testing.
 - Portable large capacity disks exists, need to test and write copying scripts.
 - Local “data manager” at LANL will oversee transfers

Schedule

- Now - End of May
 - Purchase needed equipment
 - Test data transfer methods.
- Early June-
 - Install disks and computer systems.
 - Test new archiving scripts.
 - Stop taping.
 - Turn old tape drive into a “Battle Bot”