



LHCb @ FZK – v0.1

- GSSD goal: How to set up the storage per site per VO
 - <https://twiki.cern.ch/twiki/bin/view/LCG/GSSD>
- LHCb provided many details in response to the GSSD questionnaire
 - <https://twiki.cern.ch/twiki/bin/view/LCG/GSSDLHCB>
- Exercise to see what info is still needed to set up FZK
 - <https://twiki.cern.ch/twiki/bin/view/LCG/GSSDLHCBFZK>
- Other sites and VOs to follow the example



Inputs from mega table

- Amount of disk to be provided
 - 181 TB
- Inter-site I/O rates, to/from space token
 - T1 \leftarrow T0 6.3 MB/s to LHCb_BUFFER
 - T1 \leftarrow T1 11.6 MB/s to LHCb_DST, LHCb_MC_DST
 - T1 \leftarrow T2 0.2 MB/s to ...
 - T1 \rightarrow T2 11.4 MB/s from LHCb(_MC)_M-DST, LHCb(_MC)_DST
 - T1 \rightarrow T1 8.8 MB/s from LHCb(_MC)_M-DST
- Buffers to be considered
 - WAN buffer
 - LAN buffer
 - “pin” raw data for a few days: $3d * 6.3 \text{ MB/s} = 1.6 \text{ TB}$



Space token sizes and classes

Space token desc.	FZK	ALL	class	notes
LHCb_BUFFER	16	120	T1D1	T1D0 after processing
LHCb_M-DST	14	110	T1D1	
LHCb_DST	87	665	T0D1	
LHCb_MC_M-DST	25	190	T1D1	
LHCb_MC_DST	25	190	T0D1	
LHCb_USER	15	115	T1D1	small files



Space token I/O rates

- Take real and MC together
 - Maybe not a good idea: allow for separate tape sets (JvW)

LHCb_BUFFER

input rates

output rates

6.3 MB/s in from T0

6.3 MB/s out to tape

6.3 MB/s out to reco jobs

3.6 MB/s in from reco
($320/560 * 6.3$)

3.6 MB/s out to tape

3.6 MB/s out to stripping

9.9 MB/s in

19.8 MB/s out



DST I/O rates

LHCb_M-DST

... MB/s in from stripping	... MB/s out to tape
	8.8 MB/s out to T1
	3.0 MB/s out to T2
	... MB/s out to analysis

... MB/s in	... MB/s out
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LHCb_DST

11.6 MB/s in from T1	... MB/s out to analysis
	8.4 MB/s out to T2

11.6 MB/s in	... MB/s out
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User I/O rates, questions

- LHCb_USER
 - ... MB/s in from analysis
 - ... MB/s out to analysis
 - ... MB/s out to tape

 - ... MB/s in
 - ... MB/s out
- Questions from JvW:
 - Which data online at the same time during processing steps?
 - What can go to the same tape?
 - Separate real from MC data?
 - Average file size per class?
 - Scratch areas? Data lifetimes?
 - User data: really managed by SRM or \$HOME backdoor?