LHCb: CCRC'08 Update

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Planned tasks

- Raw data distribution from pit → T0 centre
  - Use of rfcp into CASTOR from pit - T1D0
- Raw data distribution from T0 → T1 centres
  - Use of FTS - T1D0
- Recons of raw data at CERN & T1 centres
  - Production of rDST data - T1D0
  - Use of SRM 2.2
- Stripping of data at CERN & T1 centres
  - Input data: RAW & rDST - T1D0
  - Output data: DST - T1D1
  - Use SRM 2.2
- Distribution of DST data to all other centres
  - Use of FTS - T0D1 (except CERN T1D1)

All tasks envisaged during data taking in 2008

Activities across the sites

- Breakdown of processing activities (CPU needs)

Site	Fraction (%)
CERN	14
FZK	14
IN2P3	22
CNAF	15
NIKHEF/SARA	17
PIC	8
RAL	10

NB: No other production activities envisaged but user analysis will continue

Amount of data (per storage class)

Storage (TB)	LHCb_RAW (T1D0)	LHCb_RDST (T1D0)	LHCb_M-DST (T1D1)	LHCb_DST (T0D1)
CERN	42	3	8	0
FZK	3.7	3	1.2	6.8
IN2P3	5.7	4.6	1.8	6.2
CNAF	4	3.2	1.2	6.8
NIKHEF	12.1	3.7	1.4	6.6
PIC	2	1.6	0.7	7.3
RAL	14.7	2.2	0.9	7.1

Amount of data/site

Storage (TB)	T1D0	T1D1	T0D1	Tape	Disk
CERN	45	8	0	53	8
FZK	6.7	1.2	6.8	7.9	8
IN2P3	10.3	1.8	6.2	12.1	8
CNAF	7.2	1.2	6.8	8.4	8
NIKHEF	15.8	1.4	6.6	17.2	8
PIC	3.6	0.7	7.3	4.3	8
RAL	16.9	0.9	7.1	17.8	8

CPU Needs

CPU(kSI2k.days)	Recons	Stripping	Total
CERN	4564	888	5452
FZK	4449	866	5315
IN2P3	6889	1340	8229
CNAF	4736	921	5657
NIKHEF	5583	1086	6669
PIC	2397	466	2863
RAL	3330	648	3978
Total	31948	6215	38163

No CPU efficiency factor of 0.85 included a la TDRs

Nos of jobs/site

	Total Jobs			Simultaneous jobs		
	Recons	Strip	Total	Recons	Strip	Total
CERN	3300	1100	4400	236	79	315
FZK	3200	1100	4300	229	79	308
IN2P3	5000	1700	6700	358	122	480
CNAF	3400	1200	4600	243	86	329
NIKHEF	4000	1400	5400	286	100	386
PIC	1700	600	2300	122	43	165
RAL	2400	800	3200	172	58	230
Total	23000	8000	31000	1643	572	2215

Job Details

Job type	Duration (hrs)	i/p files (from tape buffer)
Recons	24	1x~1.8 GB
Strip	6	3x~1.0GB +3x1.8 GB

Cache for tape

Cache(TB)	LHCb_RAW (T1D0)	LHCb_RDST (T1D0)
CERN	1.8	0.5
FZK	1.8	0.5
IN2P3	2.8	0.7
CNAF	1.9	0.5
NIKHEF	2.2	0.6
PIC	1	0.3
RAL	1.3	0.4

This is for processing - CERN needs cache adding for pit transfer

CERN CASTOR cache for data taking

- Guaranteed 8 hour migration time
  - More likely 3 hours
- 2 TB cache

Data Access

- SRM 2.2 SE with correct space tokens are essentially there
- lcg utils/GFAL on WN will need to be 1.6.7
  - Corrects a bug found by LHCb
- Grave concerns on limitations on the implementations of SRM
  - CASTOR - understood some time ago and factored in
  - dCache - recently WAN/LAN issues have come to light
    - In frantic discussion with sites to come up with workable (temporary) solution for Feb CCRC08
    - Good collaboration with developers to discuss the way forward

DIRAC3

- CCRC08 will run under a new version of DIRAC
  - Major factorisation and upgrade of code
  - Essentially there - testing ongoing
- Critical items for LHCb to fix
  - processingDB testing of interface
    - Schema is there
  - Thorough testing with gLite WMS!
  - T1-T1 transfer
    - DIRAC module to deal with the job finalisation is lat
    - Pared down version will be used
  - S/w installation issues
    - Fallback scenario under consideration
  - Accounting
    - Issues around hosting of DB
    - Automatic generation of plots for Feb CCRC08 not there
- Timescale for testing - extremely tight!

Databases

- Conditions DB at CERN & Tier-1 centres
  - For February will NO longer use access to Conditions DB
  - Applcation not ready for production environment
    - Will be used in later CCRC
- LFC
  - For February will use local T1 instance at RAL, IN2P3 & CNAF)

Calendar of Activites

	Week-2 (4th Feb)	Week-1 (11th Feb)	Week0 (18th Feb)	Week1 (25th Feb)
Raw data distribution	Pit-T0; Pit-T0-T1 (Castor) Pit-T0-T1 (dCache)			
Reconstruction	Castor sites dCache sites			
Stripping		Castor sites dCache sites		
DST distribution		(part of stripping tests)		

Summary

- Resource requirements updated
  - Following Jan'08 CCRC meeting
- LHCb readiness
  - Plan to meet challenge as originally outlined
  - Very concerned about data access via SRM
  - Timescale extremely aggressive