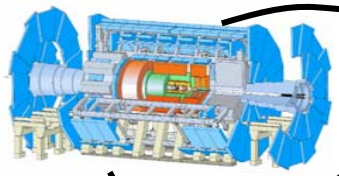
CERN, June 2006

SC4 / WLCG Workshop

Welcome & Introduction

Jamie Shiers, CERN

Data Handling and Computation for Physics Analysis



detector

event filter (selection & reconstruction)

reconstruction

raw data

event summary data

event reprocessing

processed data

batch physics analysis

analysis

analysis objects
(extracted by physics topic)

interactive physics analysis

event simulation

simulation

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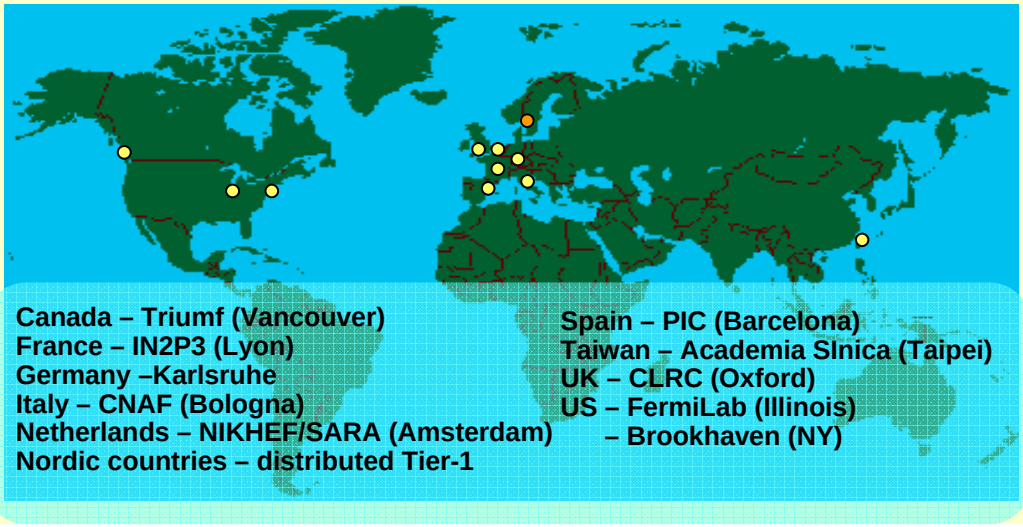
LCG Service Model

Tier-0 – the accelerator centre

- Data acquisition & initial processing
- Long-term data curation
- ➢ **Data Distribution to Tier-1 centres**



Tier-1 – "online" to the data acquisition process
→ high availability

- Managed Mass Storage –
  → grid-enabled data service
- ➢ **All re-processing passes**
- Data-heavy analysis
- National, regional support

Tier-2 – ~100 centres in ~40 countries

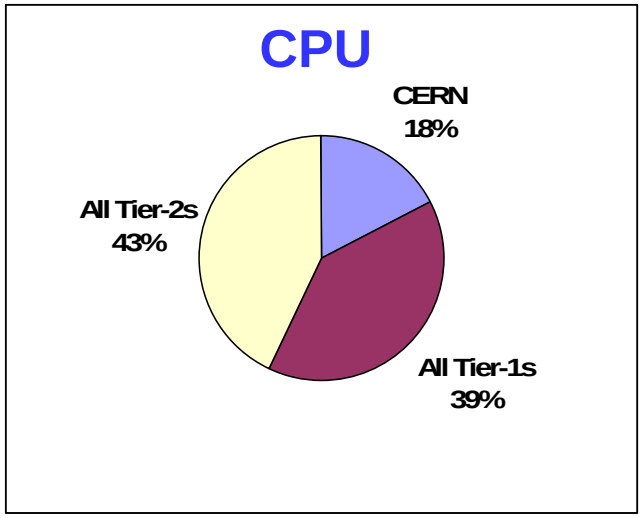
- Simulation
- End-user analysis – batch and interactive
- ➢ **Services, including Data Archive and Delivery, from Tier-1s**

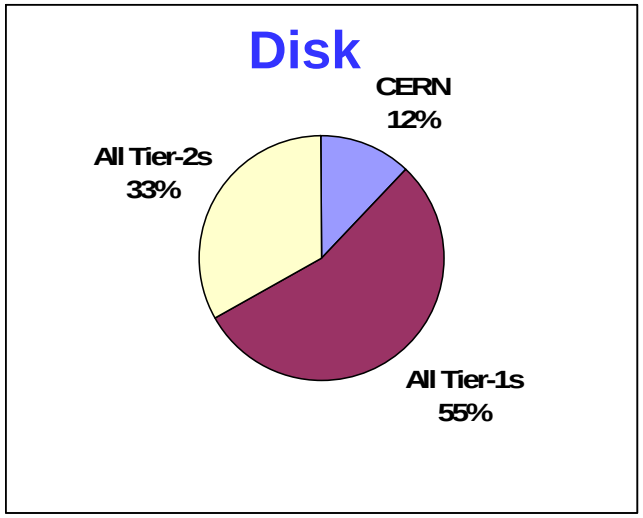
Summary of Computing Resource Requirements

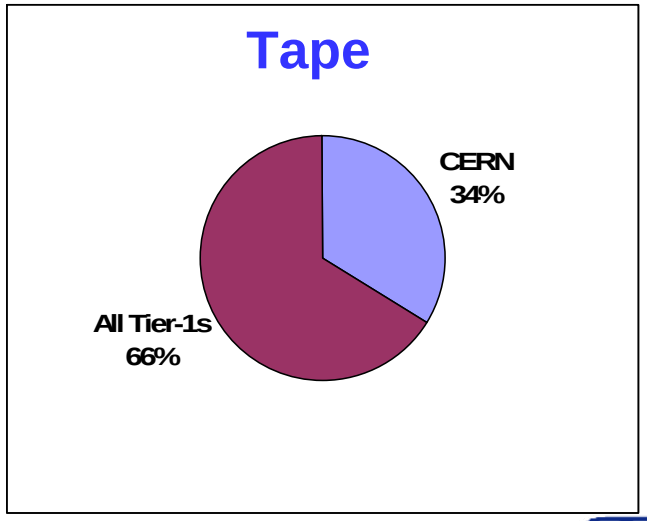
All experiments - 2008

From LCG TDR - June 2005

	CERN	*All Tier-1s*	*All Tier-2s*	*Total*
CPU (MSPECint2000s)	**25**	**56**	**61**	**142**
Disk (PetaBytes)	**7**	**31**	**19**	**57**
Tape (PetaBytes)	**18**	**35**		**53**







Conclusions

- The Service Challenge programme this year must show that we can run reliable services
- Grid reliability is the product of many components
  – middleware, grid operations, computer centres, ….
- Target for September
  - 90% site availability
  - 90% user job success
- Requires a major effort by everyone to monitor, measure, debug

Too modest?
Too ambitious?

First data will arrive next year

NOT an option to get things going later