A few Computing Items

DESY CMS Meeting September 17th 2008

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Get Ready for Data Taking

- Final challenge to meet the full metric: CCRC08
  - Discussed several times...
- Evolution of CMS Computing Mode “EcoM”
  - From 1st data to steady state
  - See e.g. Rainer's report in Aachen (FPS meeting)
- Tier-2 physics group affiliation
  - Planing of storage (access)
  - Support structures
- Site commissioning
  - Provide stable resources for production and analysis

Tier-2 Group Affiliation

- **Main analysis resource: Tier-2 centers**
  - **CAF for dedicated tasks only**
  - **Tier-1 centers for coordinated production**
    - "Users" have almost no share
    - Data sets "masked away" for users (CRAB)
- **Associate a Physics Activity Group (PAG) to a Tier-2**
  - **Each group "owns" 30TB at the Tier-2**
- **Storage management is quite some topic**
  - **Access rights**
  - **"Quota"**
  - **Several discussions with D-Cache developers**
- **Whole process very political**
  - **Additional 60TB storage pledged by DESY to host 2 more PAGs**

Tier-2 Group Affiliation -- Result

	T2_AT	T2_BE	T2_BR	T2_DE	T2_CH	T2_CN	T2_EE	T2_ES	T2_FI	T2_FR	T2_IT	T2_KR	T2_PT	T2_RU	T2_UK	T2_US
FWD phys				1												1
QCD				1						1						2
Higgs								1		1	1					1
EWK								1		1	1				1	1
SUSY	1			1							1				1	1
Top		1		1				1		1						1
Exotica										1				1	1	1
B Physics					1	1			1							1
Heavy Ions														1		0
egamma										1	1				1	2
Jets/MissET				1					1			1		1		1
Muons								1			1			1		2
B-Tagging	1		1							1						1
Tracker				1						1	1					1
Tau / Pflow							1			1	1					1
Trigger DPG								1							1	1
Reserve																2
Unallocated		?											1			1
Current Resources	0	1	1	3	0	0	1	5	2	8	5	1	0	1	4	15
Fall Resources (*)	2	1	1	6	1	1	1	5	2	9	7	1	1	4	5	21

6 Groups hosted on German Tier-2s

Aachen: Tracker and SUSY DESY: Top, Forward, QCD and Jets

Site Commissioning

- **Official tools should submit only to "commissioned" sites**
- **Various requirements**

Tier 1 sites

Rule
daily SAM availability ≥ 90%
daily JR-MM efficiency ≥ 95%
having commissioned the downlink with the tier 0
having ≥ 10 commissioned downlinks to tier 2 sites
having ≥ 4 commissioned downlinks/uplinks to other tier 1 sites

Tier 2 sites

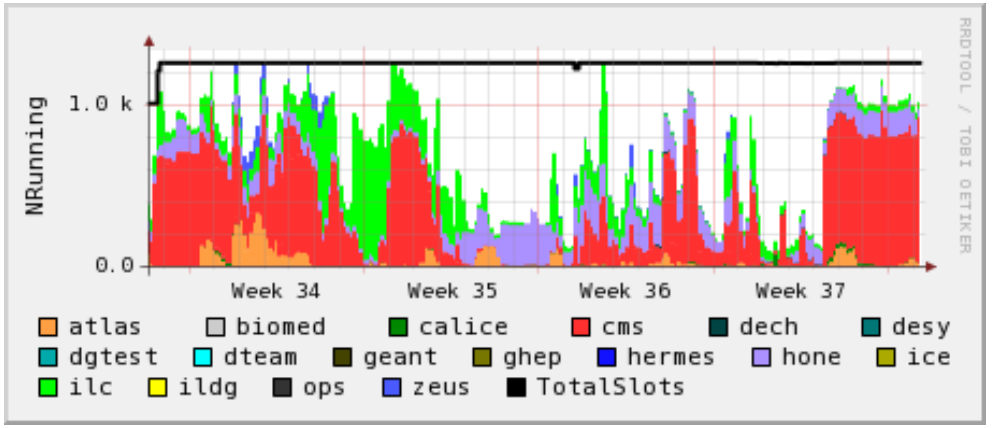
Rule	MC	Analysis
daily SAM availability ≥ 80%	X	X
daily JR-MM efficiency ≥ 90%	X	X
having a commissioned uplink with at least 1 tier 1	X	-
having a commissioned downlink with ≥ 2 tier 1 sites	-	X

Note: Site commissioning still in commissioning!

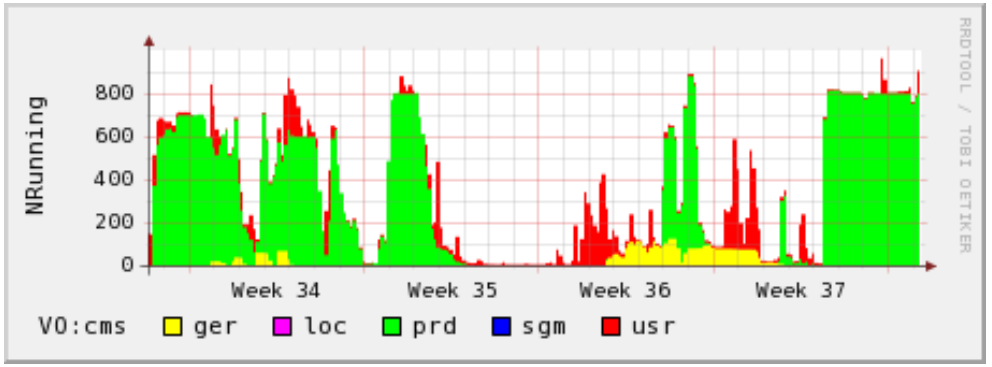
Recent Tier-2 Performance

Mid of August until mid of September

Main Grid farm 1250 cores
- ~1/3 fair share for CMS
  - ~1/3 target with higher prio for German users inside CMS share



Storage at DESY-T2 (CMS):
- ~140 TB online
- ~60 TB in commissioning
- ~120 TB justed ordered

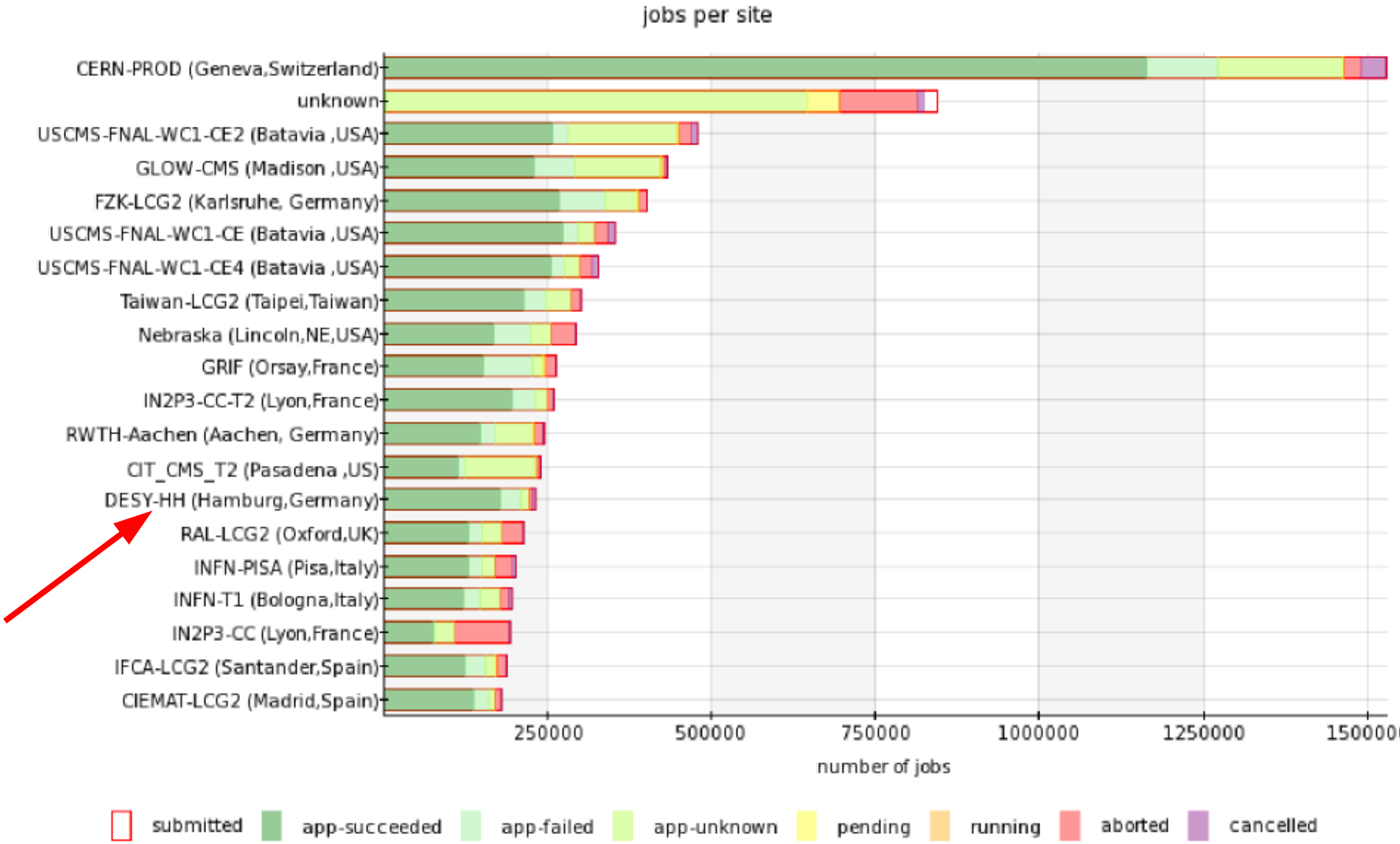


Connectivity:
- Down load links to all Tier-1s commissioned

Mostly production usage
but also user/analysis activity

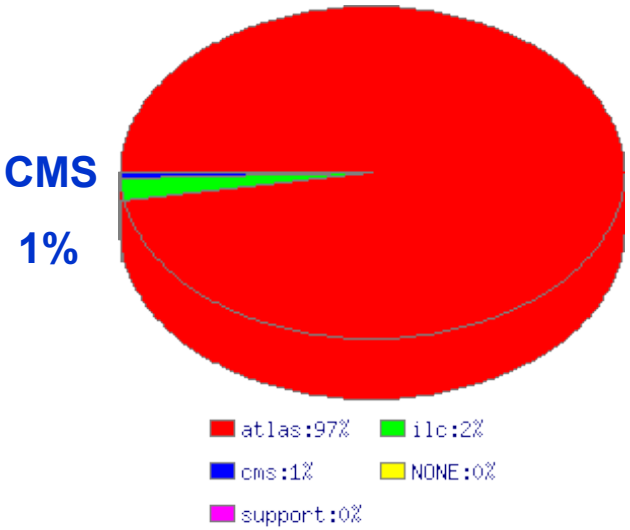
Recent Tier-2 Performance

CMS Jobs from April to August

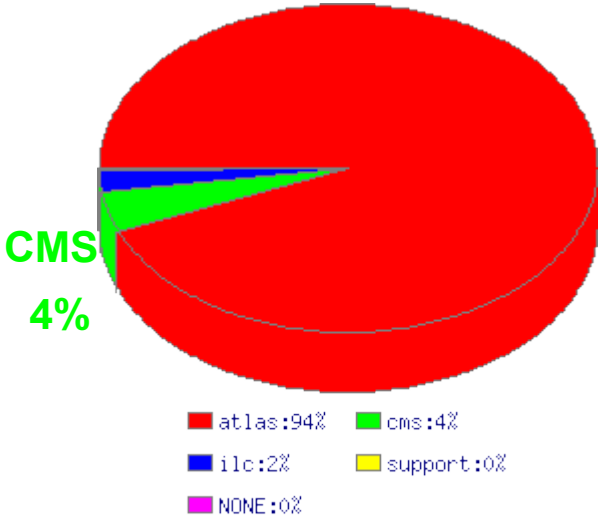


NAF

CPU time 1.2. – 20.8.2008



wall time 1.2. – 20.8.2008



Resources:

- **264 CPU cores (shared with all Exp.)**
- **256 CPU cores in commissioning (to be shared)**
- **128 CPU cores ordered (to be shared)**
- **~16TB Lustre storage (CMS)**

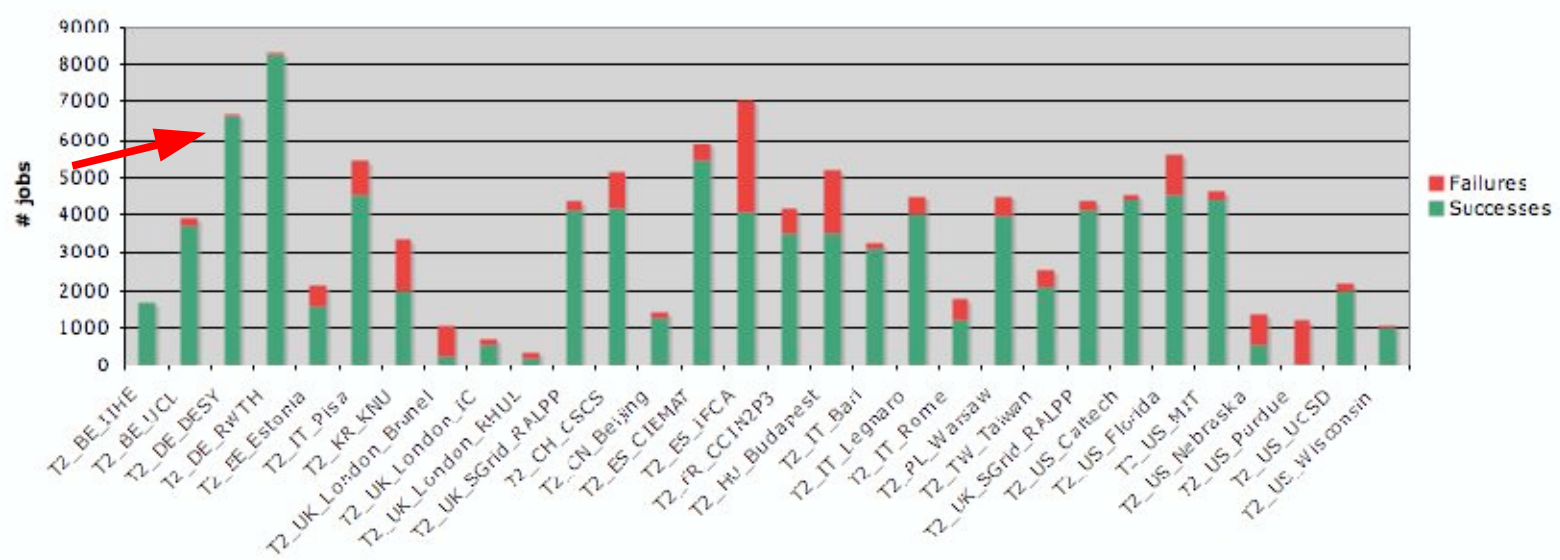
~60TB Lustre storage ordered (shared with all Exp).

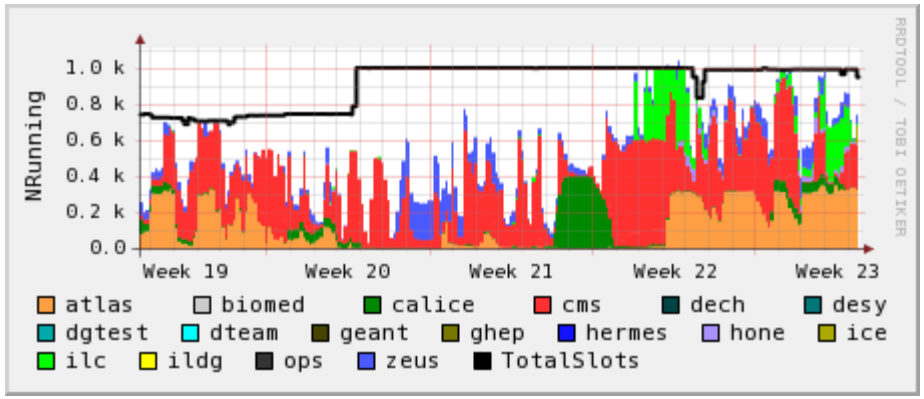
CMSSW Deployment

- **All CMS production sites get CMSSW releases centrally**
  - **15 sites in OSG (US + Brazil)**
  - **About 40 sites in EGEE region (Europe + Asia)**
    - Responsible for EGEE installations: ChW
    - Supported by a team from Brussels
  - **Most sites ready with new release after 24 hours**
- **Installation via Grid jobs**
  - **No local accounts at the sites – no interactive work**
  - **Quite some communication with sites needed**
- **Present RPM based install mechanism a the limits**
  - **Hitting a scalability issue within RPM**
- **Followup deployment discussions in broader context**
  - **WLCG operations meeting, Grid Deployment Board (GDB)**

CCRC08 at the DESY Tier-2

Analysis exercise at Tier-2 sites:





Really a **common** exercise at DESY

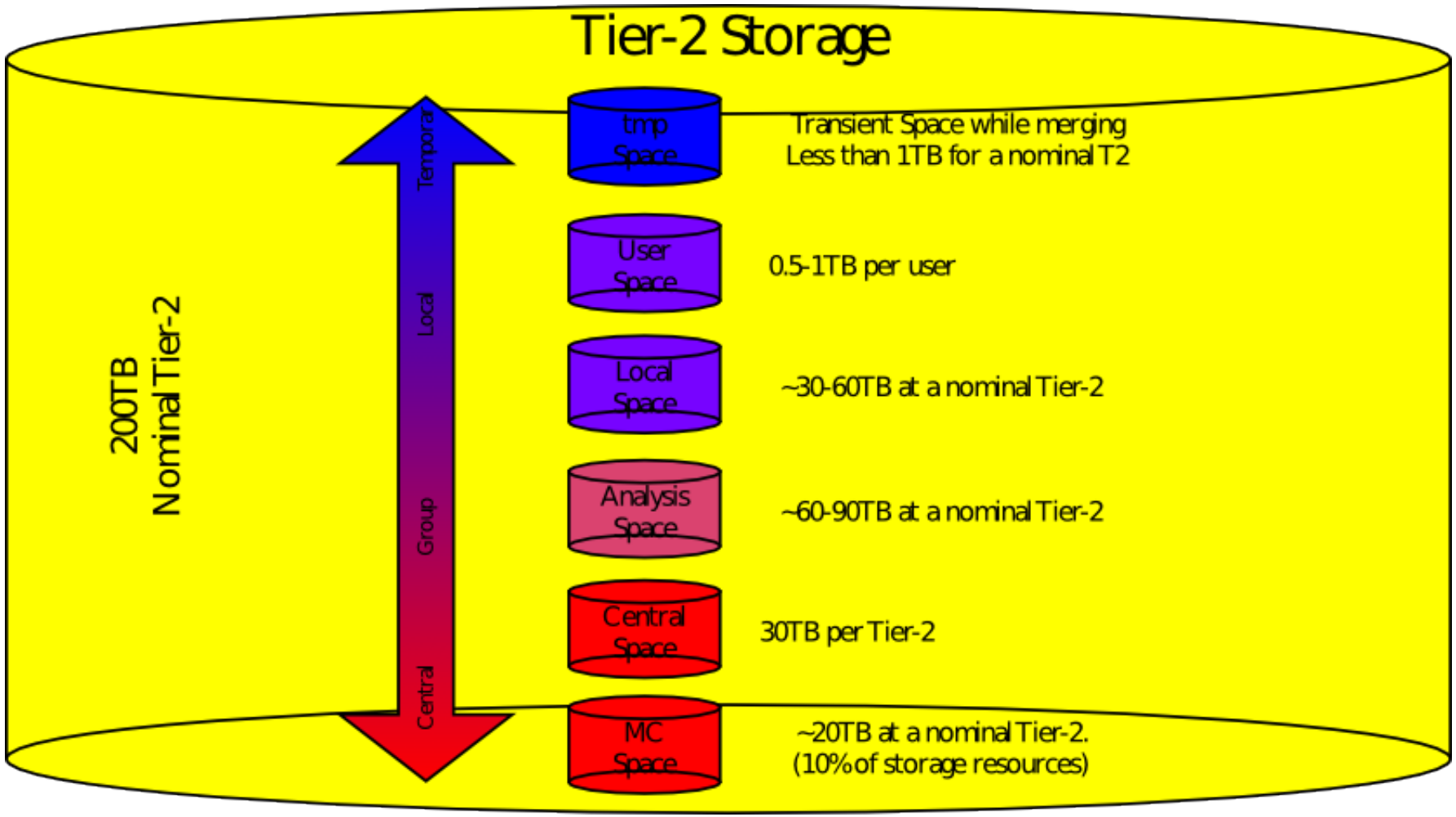
Quite useful challenge

Some bottlenecks identified:

- As usual storage
- WMS (Workload Management) now additional WMS at FZK

But a big success anyhow

CMS Tier-2 Storage: Volume View



Quite difficult to implement and manage