USCMS Tier-1 at Fermilab

The CMS experiment follows the LHC Hierarchical Model for Data Distribution:

- Tier-0 at CERN
  - Record RAW data
  - Distribute second copy to Tier-1s
  - Calibrate and do first-pass reconstruction
- Tier-1 centers (7 for CMS Experiment)
  - Manage permanent storage – RAW, simulated, processed data
  - Capacity for reprocessing, bulk analysis
  - USCMS at FNAL parameters:

FNAL Tier-1 and LPC Winter 2009			
	CPU T1	908 nodes (8.7MSI2k)	Tier-1 Processing Nodes
	CPU LPC	240 nodes(4MSI2k)	Dedicated to Local Analysis
	Disk T1	2.0PB	dCache (1600MB/s IO)
	Disk LPC	0.5PB	Dedicated to Local Analysis
	Network	15Gb/s	CERN to FNAL
	People	30FTE	Includes Developers and Ops

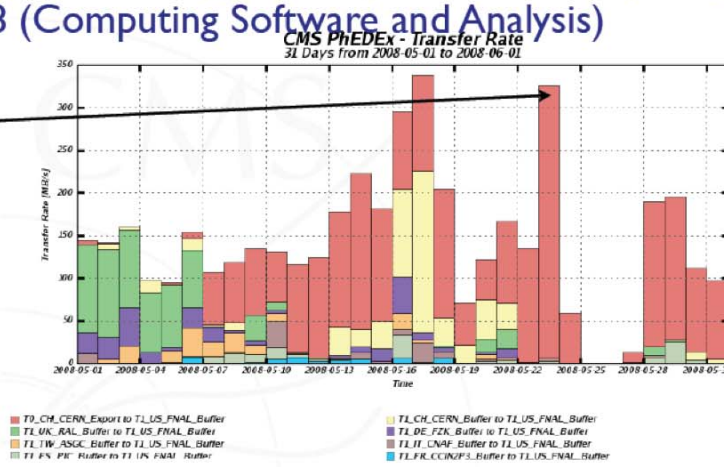
- Tier-2 centers (~ 45 for CMS Experiment)
  - Monte Carlo event simulation
  - End-user analysis
- Tier-3 centers (Outside the scope of the LHC project)
  - Facilities at universities and laboratories
  - Access to data and processing in Tier-2s, Tier-1s

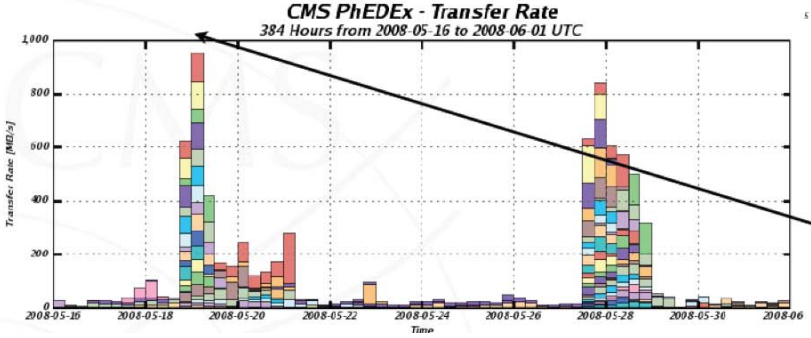
The Tier-1 Facility Performed very well during CCRC (Common Computing Readiness Challenge) and CSA08 (Computing Software and Analysis)

- Transfers

300MB/s from CERN

Import Metrics met Transfer metric for FNAL from CERN was 168MB/s averaged over 3 days.





Export Metrics Exceeded
FNAL exported to 31 Tier-2 sites
peak rate reached 950MB/s

950MB/s from FNAL