

What is a USCMS Tier 3 site?

Michael Mason

6/7/10

This is a quick summary of the information on section 2.2 CMS Computing Model of the CMS Workbook which can be found at:

<https://twiki.cern.ch/twiki/bin/view/CMS/WorkBookComputingModel>

The CMS experiment uses a Tiered computing system for two main reasons. First, the computing resources, and money to create and maintain those resources, needed by CMS are far too great for one institution to handle alone. Second, CMS is a worldwide collaboration so the information collected must be able to be shared by institutions throughout the world.

Tier 0

There is only one Tier 0 site, CERN. The main responsibility of the Tier 0 site at CERN is to collect the raw data from the CMS experiment and package that into datasets. Those datasets are then distributed to Tier 1 sites around the world.

Tier 1

There are 7 Tier 1 sites around the world. Each Tier 1 site will receive a subset of the datasets created at the Tier 0 site. The main responsibility of the Tier 1 sites is to distribute both the actual datasets, as well as MC (Monte Carlo) data created by Tier 2 sites, to other Tier 2 sites. The Tier 1 site that we work with is Fermilab.

Tier 2

There are several dozen Tier 2 sites each associated with one Tier 1 site. Tier 2 sites are normally located at places like Universities. There are two main responsibilities for Tier 2 sites. First, to perform analysis on the data they receive from their Tier 1 site. Second, to create MC data that can be distributed via their Tier 1 site.

Tier 3

There are many Tier 3 sites normally at places like Universities. A Tier 3 site is essentially a smaller version of a Tier 2 site although the resources at some Tier 3 sites are comparable to Tier 2 sites. Tier 3 sites are responsible for analyzing data and creating MC data but there is no requirement on their system's run time or data storage capabilities.