

CMD-3 Detector Computing Environment Overview

Monday, February 13, 2006 11:00 AM (20 minutes)

CMD-3 is the general purpose cryogenic magnetic detector for VEPP-2000 electron-positron collider, which is being commissioned at Budker Institute of Nuclear Physics (BINP, Novosibirsk, Russia). The main aspects of physical program of the experiment are study of known and search for new vector mesons, study of the $p\bar{p}$ and $n\bar{n}$ production cross sections in the vicinity of the threshold and search for exotic hadrons in the region of center-of-mass energy below 2 GeV. The essential upgrade of CMD-2 detector (designed for VEPP-2M collider at BINP) farm and distributed data storage management software is required to satisfy new detector needs and scheduled to perform in near future.

The contribution gives the general overview of the computing environment to be used for the RAW data staging and processing, Monte Carlo generation and handling the various user analysis jobs. It includes the description of the CMD-3 Offline Farm with the dedicated Quattor package based deployment facilities, high level detector specific job submission interface on top of the TORQUE batch system and the adaptive Journaling Virtual File System (JVFS) dealing with the distributed data storage shared among the farm nodes. JVFS functionality involves the sophisticated replica management mechanisms and virtual file system optimization services for a single dedicated batch processing cluster. Though the listed products were initially proposed to be used within the CMD-3 project only, they can be easily adopted to the computing environment of any small and medium scale HEP experiment.

Summary

CMD-3 is the general purpose cryogenic magnetic detector for VEPP-2000 electron-positron collider, which is being commissioned at Budker Institute of Nuclear Physics (BINP, Novosibirsk, Russia). The essential upgrade of CMD-2 detector (designed for VEPP-2M collider at BINP) farm and distributed data storage management software is required to satisfy new detector needs and scheduled to perform in near future. The contribution gives the general overview of the computing environment to be used for the RAW data staging and processing, Monte Carlo generation and handling the various user analysis jobs. Though the products produced were initially proposed to be used within the CMD-3 project only, they can be easily adopted to the computing environment of any small and medium scale HEP experiment.

Primary author: Mr SIBIDANOV, Alexei (Budker Institute of Nuclear Physics)

Co-authors: Mr OGNEV, Alexander (Budker Institute of Nuclear Physics); Mr ZAYTSEV, Alexander (Budker Institute of Nuclear Physics); Mr IGNATOV, Fedor (Budker Institute of Nuclear Physics); Mr FEDKO, Ilya (Budker Institute of Nuclear Physics); Mr PIROGOV, Sergei (Budker Institute of Nuclear Physics)

Presenter: Mr SIBIDANOV, Alexei (Budker Institute of Nuclear Physics)

Session Classification: Poster

Track Classification: Computing Facilities and Networking