

Table of Contents

Argonne Leadership Computing Facility (ALCF).....	1
General.....	1
Project 1: Sherpa phase-space integration for CMS Monte Carlo production, CMSHPCSherpack.....	1
Project 2: CMS Submission Infrastructure Project, CMSHPCProd.....	1
Project 3: CMS Grid Project, CMSHPCGrid.....	1

Argonne Leadership Computing Facility (ALCF)

Web page for the Caltech ALCF project

General

- [ALCF web page](#)
- [ALCF accounts web page](#)

Project 1: Sherpa phase-space integration for CMS Monte Carlo production, CMSHPCSherpack

- *Goal:* Create Sherpack on HPC
- *Description:* This work will build upon the experience and ongoing work of Tom Lecompte's team on running generators on many thousands of cores on Mira, for ATLAS. A common workflow for producing HEP Monte Carlo involves an initial CPU-intensive phase space integration step, followed by a trivially-parallelizable event generation step. In the Sherpa generator the phase-space integration step can be parallelized with MPI. We plan on demonstrating the use of MIRA to perform this step in such a way that the results can be retrieved and used for subsequent event generation with existing CMS computing resources.
- *Software:* Sherpa, CMSSW

Project 2: CMS Submission Infrastructure Project, CMSHPCProd

- *Goal:* Local CMS Production on HPC
- *Description:* We plan on demonstrating how to use Mira worker nodes for CMS production jobs that have matching requirements. To this end we will be adapting the CMS submission infrastructure to communicate to the local submission system. The CMS production interface will allow for running numerous jobs of various type while taking care of not overwhelming the local batch by means of MPI applications. As part of the work, we will moderate the submission parameters (number of jobs) and their required resources to match Mira's architectural characteristics.
- *Software:* HTcondor, CMSSW

Project 3: CMS Grid Project, CMSHPCGrid

- *Goal:* Integrate HPC to CMS Production
- *Description:* We plan on demonstrating how to use Mira worker nodes for CMS production jobs that have matching requirements. To this end we will be adapting the gateway to the CMS submission infrastructure in order to communicate to the local submission system. The CMS production interface will allow for running numerous jobs of various types while taking care of not overwhelming the local batch by means of MPI applications. Input and output data will be streamed through one or more state of the art Data Transfer Nodes to other CMS production sites. We will also investigate the use of the GridFTP servers currently in place, as a point of comparison.
- *Software:* iperf, iperf3, xrootd, gridftp, CMSSW, docker

Data Transfers

DTNs: <http://www.alcf.anl.gov/user-guides/data-transfer>

```
# On an Ubuntu machine: sudo apt-get install globus-gass-copy-progs sudo apt-get install myproxy  
myproxy-logon -b -s myproxy.alcf.anl.gov # the -b flag is needed if your host certificate is not issued from a  
known CA
```

```
time globus-url-copy -vb -p 4 -tcp-bs 4M file:///data/iso/file1.test  
gsiftp://miradtn.alcf.anl.gov/home/dkcira/file1.test
```

-- DorianKcira - 2016-04-27

This topic: Main > ALCF

Topic revision: r1 - 2016-04-27 - DorianKcira



Copyright &© 2008-2019 by the contributing authors. All material on this collaboration platform is the property of the contributing authors. Ideas, requests, problems regarding TWiki? Send feedback