A service to provide Tier 3-Like capability to Institutions for non-CRAB workflow jobs using all resources coming from the CMS Global Pool.

The Compact Muon Solenoid (CMS) is a multipurpose experiment collecting and analyzing data from proton-proton and heavy ion collisions at the Large Hadron Collider (LHC).

From the computing point of view, this simply translates into tons of data and simulation processes that need to be handled with a large amount of computing resources. The CMS Global Pool provides over 100K cores globally distributed for the experiment but users need an easy way to access such pool. While non-CRAB workflows using e.g. HTCondor-like jobs can be easily submitted via CRAB3, late-stage analysis jobs are often easier to submit via e.g. regular HTCondor jobs like the ones that are submitted to the LPC CAF at Fermilab or Tier 3 centers.

CMS Connect provides a service with a Tier 3-Like interface where users can submit condor jobs to the CMS Global Pool.

CMS Connect is based on the CI Connect platform, developed by the OSG Area coordinator of Campus Infrastructures Rob Gardner from the University of Chicago and his team.

The platform is composed of different well supported technologies to provide a set of computing services focused on batch-like analysis and it has been adopted by different projects like OSG Connect and ATLAS Connect user.

Components
- Portal Authentication and Group Management
- Login Host
- Connecting CPU resources
- Distributed Data Access
- Distributed Software
- glideinWMS
- Dashboard Reporting on CMS Connect

Signing up
This procedure requires creating a Globus ID in order to handle the identity and group management per user. The submit host (bgm.uscm.org) allows you to submit HTCondor-like jobs. The service actually runs a wrapper on top of HTCondor that lets the user control the Sites jobs will be submitted to, as well as verifying valid CMS proxy certificates are submitted with the job and such jobs are reported to the CMS Dashboard.

Selecting Sites for submission
In order to specify what Sites to submit to, a condor classAd needs to be added to the submit file:
`<DESIRE_Sites="T3_US_Purdue,T3_US_UCSD">`

Or it can be set in general by invoking the `set_condor_sites` submission script. For example, to use all Tier sites available in the US:
`source <path_to_script>/set_condor_sites.sh T3_US`.

Project Accounting
Jobs are also reported by projects, where each project corresponds to your Institution name or analysis subgroup and is specified in the submission file:
`<ProjectName = "cme-org-nd"`