

Distributed Computing at the CMS Experiment

Wednesday, September 25, 2019 12:45 PM (15 minutes)

Being one of the largest international scientific collaborations, CMS faces many challenges. To serve the computational needs of every researcher working around the world within the Collaboration, CMS relies on distributed computing technology for both computing power and data storage. The Large Hadron Collider (LHC) schedule alternates between data-taking periods and long shutdowns for maintenance and upgrades. Currently on the Long Shutdown 2, the CMS detector is being upgraded. Run 3 is scheduled to start in 2021 with an increase in luminosity. These two facts combined will pose new challenges for LHC's distributed computing and data storage infrastructure called the Worldwide LHC Computing Grid (WLCG). Aiming to increase the nominal luminosity by a factor of 5-7 a major upgrade to the LHC is expected to start after run 3 in 2026 called the High Luminosity Large Hadron Collider (HL-LHC). Preparations for this upgrade have already started.

As a member of the WLCG collaboration, Portugal has pledged to contribute to CMS Tier-2 sites with CPU and storage responsibilities.

In this talk, we will present a brief overview of the involvement of the Portuguese group in the CMS experiment. Starting from the physics analysis being done at LIP CMS group to the computational needs we foresee for the next 10 years. We will cover the tools used for our physics analyses, our computational needs, the Portuguese role in the Tier-2 management and how we are going to address the expected necessities in the next 10 years.

Primary author: DE BASTOS, Diogo

Presenter: DE BASTOS, Diogo

Session Classification: IBERGRID Contributions

Track Classification: Enabling Research Applications in advanced Digital Infrastructures