20th International Conference on Computing in High Energy and Nuclear Physics (CHEP2013)

Contribution ID: **232** Type: **Poster presentation**

The Legnaro-Padova distributed Tier-2: challenges and results

Monday 14 October 2013 15:00 (45 minutes)

The Legnaro-Padova Tier-2 is a computing facility serving the
ALICE and CMS LHC experiments. It also supports other High Energy Physics experiments and other virtual organizations of different disciplines, which can opportunistically harness idle resources if
available.

The unique characteristic of this Tier-2 is its topology: the computational resources are spread in two different sites, about 15 km
apart: the INFN Legnaro National Laboratories and the INFN Padova unit,
connected through a 10 Gbps network link (it will be soon updated to 20 Gbps).
Nevertheless these resources are seamlessly integrated and are exposed
as a single computing facility.
Despite this intrinsic complexity, the Legnaro-Padova Tier-2 ranks among the best Grid sites for what concerns reliability and availability.

The Tier-2 comprises about 190 worker nodes, providing about
26000 HS06 in total.
Such computing nodes are managed by the LSF local resource management system, and are accessible using a Grid-based interface implemented through multiple CREAM CE front-ends.

dCache, xrootd and Lustre are the storage systems in use at the Tier-2:
about 1.5 PB of disk space is available to users in total, through multiple access protocols.

A 10 Gbps network link, planned to be doubled in the next months, connects the Tier-2 to WAN. This link is used for the LHC Open Network Environment (LHCONE) and for other general purpose traffic.

In this paper we discuss about the experiences at the Legnaro-Padova Tier-2: the problems that had to be addressed, the lessons learned, the implementation choices.
We also present the tools used for the daily management
operations. These include DOCET, a Java-based webtool designed, implemented and maintained at the Legnaro-Padova Tier-2,
and deployed also in other sites, such as the LHC Italian T1.
DOCET provides an uniform interface to manage all the information
about the physical resources of a computing center. It is also used as
documentation repository available to the Tier-2 operations team.

Finally we discuss about the foreseen developments of the existing
infrastructure.
This includes in particular the evolution from a Grid-based resource
towards a Cloud-based computing facility.

Authors: Mr CRESCENTE, Alberto (INFN Padova); Mrs COSTA, Fulvia (INFN Padova); Mr MARON, Gaetano (INFN LNL); Mr BIASOTTO, Massimo (INFN LNL); Mr SGARAVATTO, Massimo (INFN Padova); Mr GULMINI,

Michele (INFN LNL); Mr MICHELOTTO, Michele (INFN Padova); Mr TONIOLO, Nicola (INFN LNL); Mr FERRARI, Roberto (INFN Padova); Mr FANTINEL, Sergio (INFN LNL); Mr BADOER, Simone (INFN LNL)

Presenter: Mr SGARAVATTO, Massimo (INFN Padova)

Session Classification: Poster presentations

Track Classification: Distributed Processing and Data Handling A: Infrastructure, Sites, and Virtualization