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Extension of the INFN Tier-1 on a HPC system

Monday 4 November 2019 11:00 (15 minutes)

The INFN Tier-1 located at CNAF in Bologna (Italy) is a major center of the WLCG e-Infrastructure, supporting the 4 major LHC collaborations and more than 30 other INFN-related experiments.

After multiple tests towards elastic expansion of CNAF compute power via Cloud resources (provided by Azure, Aruba and in the framework of the HNSciCloud project), but also building on the experience gained with the production quality extension of the Tier-1 farm on remote owned sites, the CNAF team, in collaboration with experts from the ATLAS, CMS, and LHCb experiments, has been working to put in production a solution of an integrated HTC+HPC system with the PRACE CINECA center, located nearby Bologna. Such extension will be implemented on the Marconi A2 partition, equipped with Intel Knights Landing (KNL) processors. A number of technical challenges were faced and solved in order to successfully run on low RAM nodes, as well as to overcome the closed environment (network, access, software distribution, ···) that HPC systems deploy with respect to standard GRID sites. We show preliminary results from a large scale integration effort, using resources secured via the successful PRACE grant N. 2018194658, for 30 million KNL core hours.

Consider for promotion

Yes

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