

# Extending the farm on external sites: the INFN Tier-1 experience

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The Tier-1 at CNAF is the main INFN computing facility offering computing and storage resources to more than 30 different scientific collaborations including the 4 experiments at the LHC. It is also foreseen a huge increase in computing needs in the following years mainly driven by the experiments at the LHC (especially starting with the run 3 from 2021) but also by other upcoming experiments such as CTA.

While we are considering the upgrade of the infrastructure of our data center, we are also evaluating the possibility of using CPU resources available in other data centers or even leased from commercial cloud providers. Hence, at INFN Tier-1, besides participating to the EU project HNSciCloud, we have also pledged a small amount of computing resources (~2000 cores) located at the Bari ReCaS for the WLCG experiments for 2016 and we are testing the use of resources provided by a commercial cloud provider. While the Bari ReCaS data center is directly connected to the GARR network with the obvious advantage of a low latency and high bandwidth connection, in the case of the commercial provider we rely only on the General Purpose Network.

In this paper we describe the setup phase and the first results of these installations started in the last quarter of 2015, focusing on the issues that we have had to cope with and discussing the measured results in terms of efficiency.

## Tertiary Keyword (Optional)

## Secondary Keyword (Optional)

Cloud technologies

## Primary Keyword (Mandatory)

Computing facilities

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