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Dynamic extension of INFN-CNAF Tier1 Data Center

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INFN CNAF hosts the INFN Tier-1, the main data center of INFN, the Italian National Institute for Nuclear Physics; it provides resources and services to more than 30 scientific collaborations, each utilizing a different computing model.
The largest supported collaborations are the four WLCG experiments while the remaining are mainly astro-particle experiments.
INFN CNAF currently deploys resources in excess of 200 kHS06 of Computing Power, 25 PB of disk and 50 PB of tape, the latter two interconnected via a GPFS-TSM SAN.
Recently, we has started to elastically extend the data center farm to resources provided by commercial clouds. This will prepare the center for future upgrades and could allow to cope with burst activities. The adopted approach is via the use of VPN tunnels to remote resources, in order to serve users in a completely transparent way.
The storage can be accessed via a XrootD fallback on CNAF storage when available or using the GPFS/AFM caching system.
In this talk, we are presenting our experimentation with Microsoft Azure public cloud for the CMS specific use case, using an academic grant for experimentation. We will report on the system setup, from testing to its deployment into production, and on performance obtained while utilizing Azure's remote resources.

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