Frascati Tier2

During the year 2021 the Frascati Tier2 successfully and continuously performed all the typical activities of an ATLAS Tier2: Monte Carlo production and users and physics groups analysis. The PADME experiment consolidated its activity on the Tier2 farm storing raw, MC and reconstructed data in the storage system and running MC, reprocessing and analysis jobs in the Tier2 cluster, with pledged resources.

During the year, the Tier2 farm has reached 45 kHEPSPEC of computing power and about 3 PB of disk space, running also the computing activities of the following Virtual Organisations (VO): LHCb, Belle, CTA and KM3Net. In Figure 1 the sum of wall-clock work (cores * HS06 hours) by site for the ATLAS Italian Tier2 sites.

Among the activities that involved the Tier2 staff, we mention the role of VO manager for ATLAS VO (recognized as in-kind contribution of the Italian group) and software VO manager for KM3Net VO.

For what concern the Grid middleware, during 2021 the Tier2 staff continued to test and develop the cache systems, with the DPM storage system, in collaboration with the Italian ATLAS Tier2 federation staff and as part of the IDDLS (Italian Distributed Data Lake for Science) project and the CE and batch system was migrated to HTCondor-CE with HTCondor batch/scheduler system.

Starting from 2019 the Tier2 is involved in the I.Bi.S.Co. PON (Infrastruttura per BIg data e Scientific Computing) to upgrade the Tier2 infrastructure acquiring hardware resources to develop CTA (Cherenkov Telescope Array) experiment computing in collaboration with INAF-OAR in Monte Porzio Catone.

I.Bi.S.Co farm is made of 2PB of raw disk, 24 servers for about 11kHS06 and 6 servers and, thanks to I.Bi.S.Co.'s resources it was possible to upgrade the Tier2's network infrastructure to a 10GbE/25GbE/100GbE infrastructure.

Moreover, the participation in the I.Bi.S.Co. PON resulted in the participation in the CIR I.Bi.S.Co. for the reinforcement of the staff involved in the activities on the I.Bi.S.Co. farm.

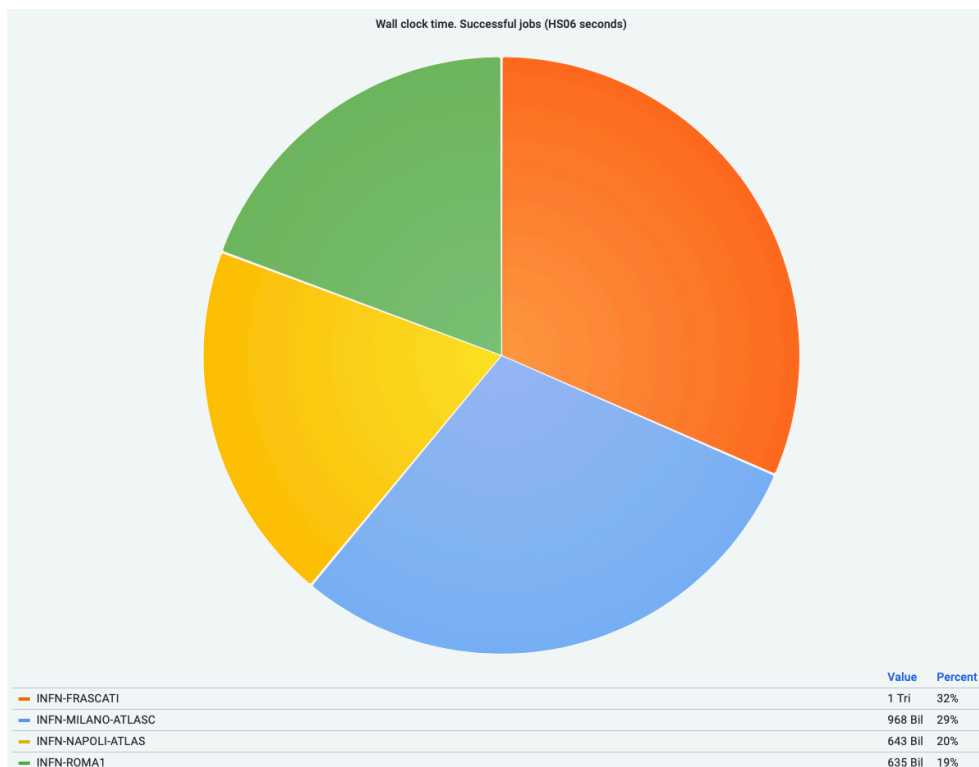|	Value	Percent
INFN-FRASCATI	1 Tri	32%
INFN-MILANO-ATLASC	968 Bil	29%
INFN-NAPOLI-ATLAS	643 Bil	20%
INFN-ROMA1	635 Bil	19%

Figure 1. SUM of wall-clock work for ATLAS VO in 2021 for Italian Tier2s