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Federating the ICSC resources of INFN Milano to INFN Datacloud: status of the work on the bare metal Kubernetes cluster

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With its Datacloud infrastructure, INFN can rely on a scalable and nation-wide network of federated cloud sites. On this foundation, the PNRR-funded (National Recovery and Resilience Plan) ICSC project (National Research Center in High Performance Computing, Big Data and Quantum Computing) has been established to conduct R&D activities for innovation in high-performance computing, simulations, and big data analytics. The computing center managed by INFN Milano has increased its capacity as part of the ICSC efforts.

INFN Milano has decided to adopt a simpler stack by installing a bare metal Kubernetes cluster and federating the resources to the INFN Datacloud without the mediation of Openstack. This configuration presents some peculiarities worth investigating: when running on bare metal servers, the application interacts directly with the host, without a hypervisor layer in between. The impacts on performance, costs, control and security will be investigated as the metrics for this configuration.

This contribution aims to describe the status of the federation of the ICSC resources at the INFN Milano computing center.

Primary authors: MARCON, Caterina Maria Luigia (Istituto Nazionale di Fisica Nucleare); REBATTO, Davide (Istituto Nazionale di Fisica Nucleare); DALESSANDRO, Francesco (Istituto Nazionale di Fisica Nucleare); PRELZ, Francesco Piero Lorenzo (Istituto Nazionale di Fisica Nucleare); CARMINATI, Leonardo (Istituto Nazionale di Fisica Nucleare)

Presenter: MARCON, Caterina Maria Luigia (Istituto Nazionale di Fisica Nucleare)

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