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Smart HPC-QC: flexible approaches for Quantum workloads integration

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Many efforts have tried to combine the HPC and QC fields, proposing integrations between quantum computers and traditional clusters. Despite these efforts, the problem is far from solved, as quantum computers face a continuous evolution. Moreover, nowadays, quantum computers are scarce compared to the traditional resources in the HPC clusters: managing the access from the HPC nodes is non-trivial, as it is easy to turn the accelerator into a bottleneck. Through the SmartHPC-QC project, we design solutions to this integration issue, defining interactions based on the application pattern and depending on the underlying technology of the quantum computer. The project aims to define an integration plan that can satisfy the users' different needs without burdening them with excessive technical complexity. To achieve this goal, we use various approaches, from more typical ones (workflow-based) to more niche solutions (like virtualisation and malleability).

Desired slot length

Speaker release

Yes

Author: Mr RIZZO, Simone (E4 COMPUTER ENGINEERING Spa)

Presenter: Mr RIZZO, Simone (E4 COMPUTER ENGINEERING Spa)

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