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Toward a compute continuum with interLink

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he integration of High-Performance Computing (HPC), High-Throughput Computing (HTC), and Cloud computing is a key to enable convergent use of hybrid infrastructures.

We envision a model where multi stage workflows can move back and forth across multiple resource providers by offloading containerized payloads.

From a technical perspective the project aim is to use the Kubernetes API primitives to enable a transparent access to any number of external hardware machines and type of backends.

We created the interLink project, an open source extension to the concept of Virtual-Kubelet with the primary goal to have HPC centers exploitable with native Kubernetes APIs with an effort close to zero from all the stakeholders' standpoint.

interLink is developed by INFN in the context of interTwin, an EU funded project that aims to build a digital-twin platform (Digital Twin Engine) for sciences, and the ICSC National Research Centre for High Performance Computing, Big Data and Quantum Computing in Italy. In this talk we will walk through the key features and the early use cases of a Kubernetes-based computing platform capable of extending its computational capabilities over heterogeneous providers: among others, the integration of a world-class supercomputer such as EuroHPC Vega and Juelich will be showcased.

Topic

Needs and solutions in scientific computing: Platforms and gateway

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