

Hybrid Cloud: Integration challenges of Big Data Science

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Cloud computing is now everywhere, and by many heralded as the solution to most - if not all - the compute and storage needs across the board. But how true is this, especially in Science? Should we abandon on-premise datacenters and transfer years' worth of efforts to cloud-based environments? Or should these two be integrated together to exploit the best of the two worlds?

EMBL-EBI has been piloting adoption of cloud resources at many levels of its operations, ranging from shifting entire workloads into independent "compute islands", to hybrid scenarios where cloud compute becomes an integral part of our on-premise resources and all the way down to disaster recovery. This has required to adapt - or define from scratch - policies to cope with these new scenarios, in particular considering the non-trivial issues around - quite obviously - data privacy and procurement. This also helped to define best practices in porting Science applications, which are now at the basis of our Research Operations (ResOps) training, because boarding the cloud requires new concepts and practices to take full advantage of the benefits it can offer. Most pipelines - and the infrastructures underpinning them - will require being reworked to fully unlock the benefit of this fundamentally different environment where flexibility is everything and efficiency is key to a reasonable and sustainable bill. This presentation will provide insights on the lessons we've learned - and taught - in our efforts to reach out for the clouds, and our experience in EU projects such as "Helix Nebula - The Science Cloud", which will soon deliver important results on how commercial clouds can be procured, and exploited.

Topic Area

The EOSC & EDI building blocks

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