## **A Microservice Data Management Architecture** for Quantum Computing

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Hybrid Data Management Architecture



## **Default Procedure**

- Decision request from an Application:  $\searrow$ Solution with or without QC?
- Commissioning of the Data Service to

extract the data to solve the problem. 2 Generation and compilation of corresponding quantum circuits. Commissioning of the Backend Service to distribute quantum circuits on QC. 4 Transfer of quantum circuits to QC and initiation of the calculation. Commissioning the Result Manager to monitor the calculation. Obtaining the status of the calculation and the results.

Delivering the result to the Data Service and optionally directly to the Application.





Wide range of providers Backend Varying result formats Service

## Support for:

- Variational Quantum Algorithms (VQAs)
- Quantum Machine Learning (QML)

Encoding labeled trees



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