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Developing a Software Management and Testing Platform-as-a-Service for Research Software

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There is a growing need to incorporate sustainable software practices into High Energy Physics. Widely supported tools offering source code management, continuous integration, unit testing and software quality assurance can greatly help improve standards. However, for resource-limited projects there is an understandable inertia in deviating effort to cover systems maintenance and application support for these tools. An externally hosted turnkey solution is therefore required to enable projects to deliver optimal code without incurring additional overhead.

This presentation describes the development of a Platform-as-a-service (PAAS) solution that combines software management and testing applications into a consolidated service. We will report on how cloud computing platforms can satisfy the desired objectives by providing agile deployment, service orchestration and the automatic scaling of resources. We will outline how software management and testing experiences from larger HEP experiments have informed the platform design to make a solution that benefits the wider research software community. Based upon feedback from early adopters we will show how this solution can lead to cost-effective resource pooling and promotes expertise between projects through collaborative code review.

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