

The Software Quality as a Service (SQaaS) portal

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The EOSC-Synergy project features the Software Quality Assurance as a Service (SQaaS) platform that provides a toolset to bring over software-development-related mainstream practices close to researchers dealing with source code and IT services. In the present work, we will cover the SQaaS portal, which aims at fulfilling a twofold objective. On the one hand it streamlines the adoption of good practices in software and service development, in the scope of the EOSC, through the composition of continuous integration and deployment (CI/CD) workflows or pipelines. On the other hand, the SQaaS portal provides a software-quality assessment tool to promote, measure and reward quality.

The SQaaS portal encompasses both the SQaaS web and API components, and as such, its main contribution is to provide a graphical interface to realize the two aforementioned objectives. As such, the SQaaS portal streamlines both the adoption of the good software engineering practices through the Pipeline as a Service module, and gives credit to software and service developers in research that are applying those practices into their regular development life cycle through the Quality Assessment and Awarding module.

The outcome of the Pipeline as a Service module is a CI/CD pipeline in the format provided by the JePL library, yet another component of the SQaaS solution. This CI/CD pipeline is then meant to be added to the target code repository so that such code is regularly checked on each change, and thus, enforcing the good quality practices.

The outcome of the Quality Assessment and Awarding module is a report that highlights the successful achievements, according to the aforementioned good practices, and the specific areas of the software project where quality attributes could be enhanced in order to obtain a higher score. Furthermore, in case of achieving a minimum set of quality practices or criteria, the module will issue a shareable and verifiable digital badge that embeds metadata that contains all the associated data generated during the quality assessment process. The EOSC-Synergy badges provide three levels of quality: gold, silver and bronze.

The latest release of the SQaaS portal includes support for software and service deployment criteria, with the capability of issuing digital badges up to silver for software and bronze for services.

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