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## Building the LCG: from middleware integration to production quality software

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In the last few years grid software (middleware) has become available from various sources. However, there are no standards yet which allow for an easy integration of different services.

Moreover, middleware was produced by different projects with the main goal of developing new functionalities rather than production quality software.

In the context of the LHC Computing Grid project (LCG) an integration, testing and certification activity is ongoing which aims at producing a stable coherent set of services.

Here we report on the processes employed to produce the LCG middleware release and related activities, including the infrastructures used, the activities needed to integrate the various components and the certification process.

Our certification process consists of a continuous iterative cycle that also involves feedback from the LCG production system and input from the software providers.

The architecture of the LCG middleware is described, including additional components developed by LCG to improve scalability and performance.

Other associated activities include packaging for deployment, porting to different platforms, debugging and patching of the software.

Functionality and stress tests are performed via a large test-bed infrastructure that allows for benchmarking of different configurations.

We describe also the results of our tests and our experience collected during the building of the LCG infrastructure.

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