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## Modernising ATLAS Software Build Infrastructure

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In the last year ATLAS has radically updated its software development infrastructure hugely reducing the complexity of building releases and greatly improving build speed, flexibility and code testing. The first step in this transition was the adoption of CMake as the software build system over the older CMT. This required the development of an automated translation from the old system to the new, followed by extensive testing and improvements. This resulted in a far more standard build process that was married to the method of building ATLAS software as a series of 12 separate projects from SVN.

We then proceeded with a migration of its code base from SVN to git. As the SVN repository had been structured to manage each package more or less independently there was no simple mapping that could be used to manage the migration into git. Instead a specialist set of scripts that captured the software changes across official software releases was developed. With some clean up of the repository and the policy of only migrating packages in production releases, we managed to reduce the repository size from 62GB to 220MB.

After moving to git we took the opportunity to introduce continuous integration so that now each code change from developers is built and tested before being approved.

With both CMake and git in place we also dramatically simplified the build management of ATLAS software. Many heavyweight homegrown tools were dropped and the build procedure was reduced to a single bootstrap of some external packages, followed by a full build of the rest of the stack. This has reduced the time for a build by a factor of 2. It is now easy to build ATLAS software, freeing developers to test compile intrusive changes or new platform ports with ease. We have also developed a system to build lightweight ATLAS releases, for simulation, analysis or physics derivations which can be built from the same branch.

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