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BinaryBuilder.jl: distributing binary libraries for Julia packages

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The Julia programming languages promises to solve the so-called "two-language problem", so that users don't need to rewrite code in other languages to achieve better performance. However, we don't live in a Julia-only world, and many high-quality libraries that we don't want to miss out have been already written in other languages. BinaryBuilder.jl allows you to take software written in compiled languages such as C, C++, Fortran, Go or Rust, and build precompiled binaries for a plethora of different platforms that can be used from Julia packages, but not only.

Automatically generated thin wrappers, called JJLs, allow users to seamlessly install binaries just like regular Julia packages, and the other Julia packages can depend on JLLs. Additionally, Julia's package manger records JLLs in the manifest file capturing the content of an environment for reproducibility, so that not only does it record Julia packages, but also binary libraries in other languages.

In this talk we will describe the architecture of BinaryBuilder.jl, and how it piggybacks Julia's package manager and the Artifacts system to safely deliver the binaries to the end users.

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