

Improved multi-platform support

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Motivation and overview

There are currently a number of obstacles for cross-platform support for zcash being integrated into the main Zcash repository. Non-x86 and/or non-linux support is not all integrated into one branch with conditionals to build for the appropriate platform, a patch needs to be generated and sent upstream to the gmp project for a bug in Windows support, the full test suite does not currently run on all platforms, and non-linux and non-x86 builders need to be deployed.

Technical approach

The following items are deliverables for this proposal:

- Unified cross platform branch and build script
- merge mac and windows support into current master with platform detection and ifdefs
- extract patchset for memory model bug in gmp for Win64 and submit upstream
- merge C++11 compliant cross-platform libsnaark changes
- deploy build and test machines for Mac and Windows suitable for use

by the ZcashCo CI system

Team background and qualifications

I performed the ports of zcash to Mac, Windows and arm64/aarch64, as well as one or more of the above to three coins that forked from zcash, and have a 20+ year track record of porting Unix/linux software and in build and release engineering.

Evaluation plan

Assuming acceptance of the relevant patches in upstream gmp, a pull request against <https://github.com/zcash/zcash.git> that is accepted into it's master branch that builds on Debian GNU/Linux, Win64 and macOS platforms. If such a pre-requisite patch is not accepted upstream within the grant period, a downstream multios branch of zcash that incorporates it will be maintained.

Operation and integration of non-linux build and test machines into the ZcashCo build system when the above PR is accepted for the remainder of the grant period will constitute completion of all goals for this project.

Security considerations

Build, release and download systems need to be in secure, high grade hosting facilities, and access to build and test systems strictly limited

to relevant Zcash community personnel.

Schedule

Aside from the unknown of upstream patch acceptance by the gmp project, all proposal items should be able to be fully deployed and tested within less than 6 months.

Budget and justification

-Mac and Windows build/test machines: \$250/mo (non-standard niche providers required) for up to 12 months

-Labor: \$5000