

HW8

Compositional CompCert

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This paper is an extension of the work done in the previous authors in CompCert. The CompCert project focused on formally verifying whole program correctness. Despite the correctness properties proven by the CompCert research, the linking aspect was still missing. The authors in this paper, attempt to have a notion of language independent linking, interaction semantics and logical simulation relations in order to prove the Compositional compiler correctness property.

The requirement of a compositional compilers logically makes sense. The reason for doing so is that the compiler is attempting to convert from Clight to x86 and if it supports language independent linking, it will be really cool. This way the embedded systems people can have part assembly and part Clight code which will be guaranteed to be correct or not. However, in fig. 14 the lines of codes listed for the proof varies a lot. CompCert 2.1 proofs are 2x times smaller. Despite that the length of the proofs is sort of justified since the increase is due to duplicate language definitions.