chem-bla-ics

Parallel building the CDK

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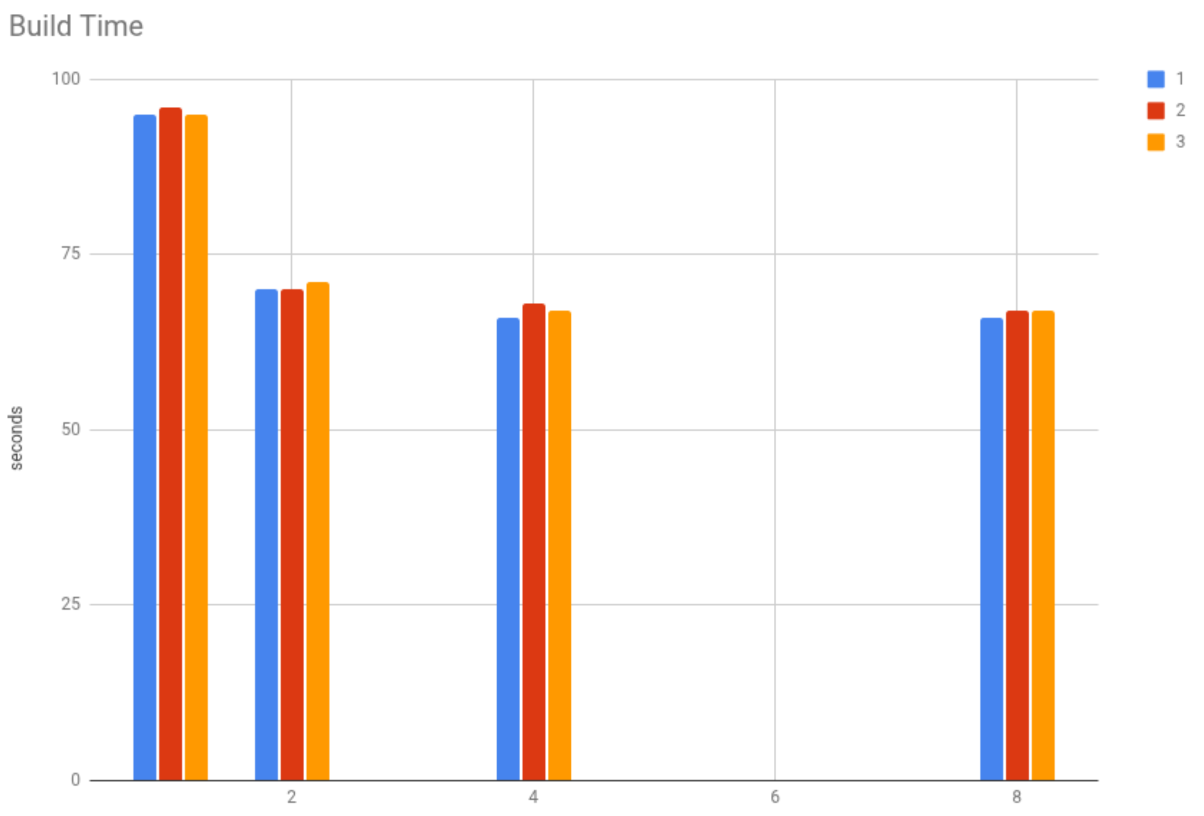
Abstract
Some time ago, I added parallel building targets for CDK's Ant build.xml. Now that I am setting up a Nightly for the jchempaint-primary branch, and really only want to report on the CDK modules control and render, I need the build system to use a properties files to define which modules should be compiled.

Some time ago, I added parallel building targets for CDK's Ant `build.xml`. Now that I am setting up a Nightly for the jchempaint-primary branch, and really only want to report on the CDK modules `control` and `render`, I need the build system to use a properties files to define which modules should be compiled.

So, I hacked a bit on the build system, and made use of two ant-contrib tasks, `if` and `foreach` which in the first place reduce the size of the `build.xml`, but also provide means for parallelization. Earlier, it was using the `parallel` task of Ant itself for this (see CDK Module dependencies #2).

The build dependencies between CDK modules are fairly complex, and typically this complexity increases upon bug fixing etc. Ideally, the build dependencies will be calculated on runtime, instead of being hard-coded right now, and I will explore this in the near future.

These dependencies can be used to build some of the module in parallel, but not all. This causes speed up of the compilation not to scale linearly with the number of threads or cores. The below build times are calculated for three replicates, on a four core machine:



Going from one to two threads certainly pays of, but going to 4 shows only a three second speed up. The four processor cores were not utilized 100%, so I also attempted 2 threads core, but that showed zero improvement.