

Klever - Feature #8568

Optimize weaving

11/13/2017 10:47 AM - Evgeny Novikov

Status:	Closed	Start date:	11/13/2017
Priority:	Urgent	Due date:	
Assignee:	Evgeny Novikov	% Done:	0%
Category:	Tasks generation	Estimated time:	0.00 hour
Target version:	3.0		
Published in build:			
Description			
After Ilya supported reusing SA and EMG results one of the most time consuming and redundant operation is processing the same models for various verification objects and rule specifications. Moreover several file transformations, e.g. preprocessing of CIF output files, should be avoided.			
Related issues:			
Blocked by Klever - Feature #6731: Pass source code just through C-backend if...		Closed	02/03/2016

History

#1 - 08/20/2018 10:23 AM - Evgeny Novikov

- Target version set to 3.0
- Priority changed from High to Urgent
- Assignee changed from Ilya Zakharov to Evgeny Novikov

Weaver became a real bottleneck. It does too much I/O work most of which is redundant. For instance, its wall time exceeds its CPU time in ~6 times!

#2 - 09/28/2018 12:22 PM - Evgeny Novikov

- Description updated
- Subject changed from Reuse processed models to Optimize weaving

#3 - 01/25/2019 03:21 PM - Evgeny Novikov

- Target version deleted (3.0)
- Priority changed from Urgent to High

Let's do minor optimizations one day later.

#4 - 04/10/2019 10:42 AM - Evgeny Novikov

- Blocked by Feature #6731: Pass source code just through C-backend if aspects are empty added

#5 - 02/10/2020 06:23 PM - Evgeny Novikov

- Target version set to 3.0
- Priority changed from High to Urgent

This issue became urgent after Weaver started to obtain cross references for models with Clade. Although, it is possible to essentially speed up this by launching builds and Clade in parallel, but it is just a workaround that can cause very unpleasant consumption of computational resources. So, I suggest to implement some trivial caching to store immutable results of both weaving and cross reference calculation.

#6 - 02/17/2020 09:39 AM - Evgeny Novikov

- Status changed from New to Closed

I implemented the feature in branch *weaver-cache* that I merged to master in [499b949a6](#).

The optimization speed ups Weaver considerably, so that it becomes even faster than as it was before we added support for so called additional sources and cross references. On powerful machines with fast disks it is not very noticeable, but, say, on OpenStack virtual machines one will get considerable improvement. Besides, it affects those jobs that have rather simple tasks much while for jobs with complicated tasks the absolute difference will be not so big.

#7 - 02/17/2020 02:25 PM - Evgeny Novikov

One important note! By using option "Original C source files" (it is default for the production mode) for "Code coverage details" when starting job decisions, one can speed up Weaver by an order of magnitude. Of course, there will be neither additional sources except for original ones nor cross references and highlights for them.

#8 - 02/17/2020 02:26 PM - Evgeny Novikov

This works since [1ec20b120](#) to master.