Gromacs - Task #1415
Get rid of legacyheaders/
01/02/2014 05:08 PM - Teemu Murtola

Status: New
Priority: Normal
Assignee: Mark Abraham
Category: core library
Target version: 5.x

Description
The legacyheaders/ directory was meant as a temporary workaround to be able to move files to the new directory layout gradually, while keeping the build and the installed headers working all the time. The original idea (when the discussion started back in 2010 or so) was that this would be more or less gone by 5.0, but it has been quite persistently alive. So the goal would be to have all the headers from src/gromacs/legacyheaders/ moved into subdirectories like src/gromacs/domdec/ or src/gromacs/nbnxn/ or something, together with the source files that implement those functions and anything that belongs naturally together with them. Large parts of this should not be rocket science, and if people would contribute on the areas that they know, we could then see what are the problematic areas. The initial division can also be adjusted later as we grow wiser.

There are currently about 150 headers remaining, plus 38 from thread_mpi (the latter should be easy to move, once there is some clarify for #1411). Large parts of this will be easy, but the types/ subdirectory can be challenging.

This would allow us to clearly see the dependencies between the modules and draw reasonable division lines for the different libraries required for, e.g., #1165. Visualizing the dependencies between the parts with something like https://gerrit.gromacs.org/#/c/2908/ would provide a much clearer picture of where we are and what could be done to clarify the structure of the code.

Associated revisions
Revision fdbd0916 - 01/11/2014 02:41 PM - Carsten Kutzner
Move essential dynamics / flooding code to separate directory
Part of #1415 Get rid of legacyheaders.

Additional changes:
- provided doxygen-style documentation for functions in edsam.h
  (partly copied over from edsam.c and removed there to avoid duplication)
- uncrustified edsam.c and edsam.h

Change-Id: If4af498470c5200d50ac1d1b5537917c873380b5

Revision 904e082b - 01/13/2014 08:06 PM - Carsten Kutzner
Move pull code to separate subdirectory
Another part of #1415 Get rid of legacy headers.

Other changes:
- updated pulling-related include guards to new format
- updated documentation for doxygen
- updated .h includes
- uncrustified pull.h and pull_rotation.h
- updated copyright year for all files touched by this commit

Change-Id: Ief1ed3543b84f651d1bff01f1952342850f5c22
Move more preprocessing files into the module

This removes the need for the gmxi_xlib CMake object library, because there is no longer random functionality orphaned in src/programs/gmx (which is there because it was orphaned in src/kernel in release-4-6).

Moved legacyheaders/grompp.h to gmxpreprocess/grompp-impl.h since it only declared structures that are (now) only used in that module (and it no longer #includes stdio.h). gmxpreprocess/grompp.h now only declares gmx_grompp().

Likewise, pdb2gmx, protonate and x2top now have their own single-function headers.

Removed useless declaration of ncontrol from h_db.h

Removed grompp.h-related useless dependencies, declarations and definitions from Generalized Born files.

Updated include and added C++ guards for files already within the module (and new ones). Uncrustified, bumped copyrights

Refs #1415

Change-Id: le7967d7d7f61df684d530e3c2d982486a3cd128f

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Move smallloc.h to utility/

One common header away from legacyheaders/. Mostly mechanical replacement for the include paths, but removed a few instances where the header was included more than once. Also, reordered the headers a bit, mainly in C++ files.

Part of #1415.

Change-Id: lc438d501ebf5eccc285655a9e8f2f625eb12f1d1
Revision 2ca0f555 - 04/02/2014 03:11 PM - Teemu Murtola

Move string2.* to utility/cstringutil.*

Another common header away from legacyheaders/.
Some associated #include cleanup.
This reintroduces some unwanted dependencies (like utility -> fileio),
but those need to be fixed separately.

Part of #1415.

Change-Id: lfb2820019e2b41ef74bca9cd202364917e43d58

Revision 1fe1fb54 - 04/08/2014 05:38 PM - Teemu Murtola

Move gmx_fatal.* to utility/fatalerror.*

One more included-by-all header to utility/.
Mainly mechanical replacement of include paths, some reordering in C++
files. Minor clean-up in the moved files.
gmx_fatal_collective.h not moved at this point, as it is unclear whether
it should go here, or somewhere else (utility/ should not depend on
t_commrec...).

Now, it's mainly types/simple.h that prevents removing some module-level
dependencies to legacyheaders/.
Finding a good location for that (or
its contents, if it needs to be split), and reorganizing the code a bit
more should now allow really putting utility/ at the bottom of the
dependency stack where it belongs.

Part of #1415.

Change-Id: l6e487566d5bd7c9ec7a1455a2d31bd6d645bada3

Revision 83847a3c - 04/16/2014 03:45 AM - Teemu Murtola

Remove sysstuff.h

Replace this with those standard headers that are actually necessary for
the source files. There are likely several transitively covered header
dependencies now, but those can be resolved when they give problems.
One more header off from legacyheaders/.

Part of #1415.

Change-Id: l4cc3f0ee00f546dad929512e532d8ef6b11da3694
Revision 0d0e128c - 04/16/2014 03:46 AM - Teemu Murtola

Move xvgr.* to fileio/

Part of #1415

Change-Id: lb3d78bce62a4c03c4d72001164921edd556657a2

Revision 826d049d - 04/17/2014 11:12 AM - Teemu Murtola

Move vec.h to math/

Most of the changes are scripted replacement of include paths.
Exceptions:
- #includes in the moved file were cleaned up slightly, and include
  guards adjusted.
- Places where it was included as "gromacs/legacyheaders/vec.h" were
  handled manually and the include order adjusted.
- Removal of unnecessary #include "vec.h" from update.h revealed some
  transitive dependencies that were fixed. Some associated include
  order cleanup in these files.
- Removed some duplicate includes.
- Remove dependency from linearalgebra/matrix.c to vec.h (only needed
  for a single sqr()) to avoid a cyclic math <-> linearalgebra
  dependency.

Part of #1415.

Change-Id: I7ece6eafa22139215510148807c5979f8950a885

Revision 7b9f9426 - 04/20/2014 07:58 PM - Roland Schulz

Move part of macros.h to grompp-impl.h

Part of #1415.

Change-Id: l360ae1f220b6c51e90edbbe136053fd2e1c0ad5b

Revision 3126f116 - 04/27/2014 01:19 PM - Teemu Murtola

Move 'real' definition to utility/real.h

- types/simple.h still includes the new header to avoid touching all
  code depending on this.
- Go through most files outside gmxlib and mdlib that included
  types/simple.h, and checked whether headers from utility/ could
  fulfill the needs. Replaced at least in places where this helped
  fully remove legacyheaders/ dependencies.

11/25/2015
- Some minor changes elsewhere to remove legacyheaders/ dependencies from modules. Now linearalgebra/ and statistics/ don't depend on legacyheaders, improving the layout of the dependency graph significantly.

   In the long run, this may be better outside utility/ to better distinguish code that depends on 'real' from parts that do not. Currently, it would create a lot of cyclic dependencies everywhere else.

   Part of #1415.

   Change-Id: l2aa1890357377d0d14c05b3968e1b36e1023458f

Revision 83fd360 - 04/27/2014 09:12 PM - Teemu Murtola
Move rvec and friends to math/vectypes.h

   Adjust a few more types/simple.h includes to use only its component parts. Now, math/ has only very few legacyheaders/ dependencies left.

   Part of #1415

   Change-Id: ffleafa4fac5c5e0c744cf6deecac4eedae2caf5

Revision 2cc66cb6 - 04/28/2014 04:24 AM - Roland Schulz
Reduced usage of typdefs.h

   Preliminary step to move types out of legacyheader.

   Renamed parameter called "matrix" because cppcheck gets confused if a parameter is called the same as a type.

   Part of #1415

   Change-Id: f9207a7b8de7f092bab890da128abbb48a8d97b79

Revision 604cd696 - 05/14/2014 09:33 PM - Teemu Murtola
Move physics.* to math/units.*

   - Remove some unnecessary #includes.
   - Remove the dummy tests; easy to rewrite as usable tests using GTest if someone needs those. They were anyways testing code that no one is still calling, even though it was introduced several years ago.

   Now gmxlib is free of *_test.c files.
Now, only one file using atom_id is keeping math/ dependent on legacyheaders/.

Part of #1415.

Change-Id: l31312b92cf9f5d5129fbd90f31fc27be27afa

**Revision 2b5c9ac3 - 09/22/2015 01:34 PM - David van der Spoel**

Removed legacyheaders/types/commrec_frd.h from typedef.h

Related to #1415

Change-Id: l9a9dd7f1e62cf040d183370d187f6a23ede7fa

**Revision 6cc44d3e - 11/03/2015 09:26 PM - David van der Spoel**

Moved df_history utility routines from typedefs to new file.

Part of #1415.

Change-Id: la2b9e6e5342cb3bb5820894f82e29b9d969bc6

**Revision 2a9f0384 - 11/11/2015 12:53 AM - David van der Spoel**

Removed legacyheaders/typedefs.h

More cleaning up in legacyheaders. Mostly this patch involves shuffling around include files, and adding a couple of forward declarations. Renames gmxlib/typedefs.* to mdtypes/state.* and introduces new utility/int64_to_int.cpp with header.

Introduced new directory mdtypes to resolve circular dependencies.

Right now state.* and history files are the only files living there.

Part of #1415

Change-Id: l5dc59a2ca3bd1f9c539f4b9deb9f116b30106fc

**Revision 890ce4e8 - 11/11/2015 10:10 PM - David van der Spoel**

Moved inputrec.* from gmxlib and legacyheaders to mdtypes.

Part of #1415

Change-Id: ldb00712d1b6ea9648a36d349f670790aaaf2c6d4
Revision e4034c03 - 11/12/2015 08:44 AM - David van der Spoel
Moved copyrite.* to fileio from gmxlib and legacyheaders.
Part of #1415
Change-Id: ld6cfb84cc683f88731fac7d80053aad9b828806

Revision 56a31f36 - 11/12/2015 04:37 PM - David van der Spoel
Moved txdump.* to fileio.
Some cleanups in edsam.cpp too.
Part of #1415
Change-Id: l6cd58951e3f1b9b0d875d4448a958e57c767e7

Revision 99e5a7cc - 11/13/2015 08:05 AM - David van der Spoel
Moved genborn.h to mdlib
Part of #1415
Change-Id: la2d734be40d97426348a153040cf3113abf7a3

Revision e8e13a0e - 11/15/2015 10:21 AM - David van der Spoel
Merged legacyheaders/types/state.h into mdtypes/state.h
Also merged swap/enum.h into legacyheaders/types/enum.h to be moved later out of legacyheaders.
Part of #1415, #1854.
Change-Id: le5df190d6798b1c531896de80ef25c060836479

Revision a3be7872 - 11/15/2015 01:46 PM - David van der Spoel
Merged legacyheaders/types/inputrec.h into mdtypes/inputrec.h
Part of #1415.
Change-Id: l39885a0147173170bc6a7a7c2e54e7f21d64370

Revision a8a355f0 - 11/20/2015 02:02 AM - David van der Spoel
Moved legacyheaders/types/energy.h to mdtyes.
Part of #1415
Revision 386dedc8 - 11/20/2015 09:19 AM - David van der Spoel
Moved mdatom.h from legacyheader/types to mdtypes.
Add doxygen comments to the elements of the structure.
Part of #1415.
Change-Id: i811ad4782dd482ac7fe198c85c85b91af6e20b67

Revision ca3bb88c - 11/20/2015 09:51 AM - David van der Spoel
Merged legacyheaders/nrnb.h and types/nrnb.h to gmxlib.
Part of #1415
Change-Id: i33922419a6a5a7976bda12fd81e2d752eb0c5c6d

Revision f75bc658 - 11/20/2015 03:44 PM - David van der Spoel
Combine enums.h and names*.
Combined enums.h and names* to mdtypes/md Enums.cpp/h.
Added doxygen comments to md_enum.h.
Removed macros in inputrec.h to reduce cyclic dependencies.
Clean up of legacyheaders. By removing some unnecessary includes from the files names.h and enums.h (now md Enums.h)
a lot of 'freeriders' showed up, therefore had to include topology.h in many files.
Part of #1415
Change-Id: i12b8ef4f82b7aec806aae2eee7d77604e86dc576

Revision e5a42060 - 11/20/2015 06:18 PM - David van der Spoel
Merged legacyheaders/types/ns.h and nblist.h to mdtypes/nblist.h
Also parts moved out of forcerec.h.
In order to make this work some parts of the forcerec structure had to be made pointers, and the same for nblist structures.
Part of #1415.
Change-Id: laaadd76ccca001af11371b9a0ad1b75a727732f00
Revision 806e77b1 - 11/20/2015 08:19 PM - David van der Spoel
Moved legacyheaders/types/group.h to mdtypes.

Part of #1415.
Change-Id: I959941cf586b90e97359e8ec0266dc923f718aa5

Revision 87f0b419 - 11/21/2015 11:51 AM - David van der Spoel
Merged genborn.h from legacyheaders/types into mdlib/genborn.h

Part of #1415.
Change-Id: l2c9dcb827219649791183d016bf07d056a9ca049

Revision 6abe0013 - 11/22/2015 02:15 PM - David van der Spoel
Cleanups in legacyheader/types/commrec.h

Removed superfluous typedefs from above file.

Part of #1415.
Change-Id: If3d99dc24864d21dbbfa2eaf57fd5264f7d3d9ec

Revision 1cd9683a - 11/23/2015 03:11 PM - David van der Spoel
Moved domdec structures out of commrec.h.

In order to clean up the legacyheaders directory here the structures relating to domain decomposition are taken out of commrec.h and moved to a new file domdec/domdec_struct.h

To not introduce new cyclic dependencies modified the interface of write_checkpoint and gmx_fatal_collective.

Part of #1415
Change-Id: I485a03eddbbb87dccc236b7e2e7d85d03383d86f61

History

#1 - 01/07/2014 06:52 PM - Gerrit Code Review Bot
Gerrit received a related patchset '1' for Issue #1415.
Uploader: Carsten Kutzner (ckutzne@gwdg.de)
Change-Id: If4af984c70c5200d50ac1db5537917c873380b5
Gerrit URL: https://gerrit.gromacs.org/2961
Gerrit received a related patchset '1' for Issue #1415.
Uploader: Carsten Kutzner (ckutzne@gwdg.de)
Change-Id: Ief1ed3543b84f651d1bff011952b342850f5c22
Gerrit URL: https://gerrit.gromacs.org/2979

Gerrit received a related patchset '1' for Issue #1415.
Uploader: Mark Abraham (mark.j.abraham@gmail.com)
Change-Id: Ie7967d7d79e6b4d530a3c2d682486a3cd128f
Gerrit URL: https://gerrit.gromacs.org/2993

Gerrit received a related patchset '1' for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: Ic438d501ebf5eccc285655a9e82f625eb1261d
Gerrit URL: https://gerrit.gromacs.org/3311

Gerrit received a related patchset '1' for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: Ifb2820019e2b41ef74bcbac20364917e43d58
Gerrit URL: https://gerrit.gromacs.org/3318

Gerrit received a related patchset '1' for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: I6e487566d5bd7c9ec7a1455a2d31bd6d645bad3
Gerrit URL: https://gerrit.gromacs.org/3328

Gerrit received a related patchset '1' for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: I4cc3f0eec0f546dad929512e532d8efb11da3694
Gerrit URL: https://gerrit.gromacs.org/3355

Gerrit received a related patchset '1' for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: I6e487566d5bd7c9ec7a1455a2d31bd6d645bad3
Gerrit URL: https://gerrit.gromacs.org/3362

Gerrit received a related patchset '1' for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: I4cc3f0eec0f546dad929512e532d8efb11da3694
Gerrit URL: https://gerrit.gromacs.org/3355

Gerrit received a related patchset '1' for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: I6e487566d5bd7c9ec7a1455a2d31bd6d645bad3
Gerrit URL: https://gerrit.gromacs.org/3362

Gerrit received a related patchset '1' for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: I6e487566d5bd7c9ec7a1455a2d31bd6d645bad3
Gerrit URL: https://gerrit.gromacs.org/3362
Gerrit received a related patchset '1' for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: I7ece6eafa22139215510148807c5979f8950a885
Gerrit URL: https://gerrit.gromacs.org/3363

#10 - 04/16/2014 08:00 AM - Roland Schulz
I think we shouldn't have a new top level folder for each simulation method. This is getting quickly out of hand. We already have: imd, pulling, swap, essentialdynamics. Not as problematic (because the list probably won't grow quickly) but also quite long of a list is math related top-level folders (math, fft, linearalgebra, statistics). Would it make sense to make the last 3 subfolders?

I'm still a bit confused about the dependency checking scripts. What is the easiest approach to use them to know whether moving files into different (sub)folders will create cyclic dependencies?

#11 - 04/16/2014 09:12 AM - Teemu Murtola
In general, I agree that the current subdirectories are possibly too fine-grained. But it is easier to first create smaller units and then combine them, than to try to figure out in advance what kind of bigger units make most sense. So I think that the current approach is reasonable, but we should aim for a smaller amount of top-level folders once it is clear what can be combined and makes sense to combine. Folders with just one or a few files don't really make much sense.

Roland Schulz wrote:
I think we shouldn't have a new top level folder for each simulation method. This is getting quickly out of hand. We already have: imd, pulling, swap, essentialdynamics.

I agree. My initial thought was to put all these special methods under a special/md/ folder or similar.

Not as problematic (because the list probably won't grow quickly) but also quite long of a list is math related top-level folders (math, fft, linearalgebra, statistics). Would it make sense to make the last 3 subfolders?

Possibly. fft/ and linearalgebra/ have a special purpose of wrapping external libraries, and as such, have some relatively complex internal logic. But it would be simpler if there could be dependencies in both directions. This would, e.g., allow putting the definition of real and rvec into math/.

I'm still a bit confused about the dependency checking scripts. What is the easiest approach to use them to know whether moving files into different (sub)folders will create cyclic dependencies?

Currently, you need to run make dep-graphs and view doxygen/depgrahs/module-deps.dot.png. It currently only shows folders one level below src/gromacs/, but that is possible to change (but requires some thinking to keep things clear, both in the graph and elsewhere). I've been thinking of adding a proper cycle detection into the script, but that is complicated by the currently existing cycles. I'll see whether that would still be possible.
#12 - 04/18/2014 04:21 PM - Gerrit Code Review Bot
Gerrit received a related patchset ‘1’ for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: I2aa1890357377d0d14c05b3968e1b36e1023458f
Gerrit URL: https://gerrit.gromacs.org/3378

#13 - 04/20/2014 08:09 PM - Gerrit Code Review Bot
Gerrit received a related patchset ‘1’ for Issue #1415.
Uploader: Roland Schulz (roland@rschulz.eu)
Change-Id: I360ae1f220b6c51e90edbbe136053fd2e1c0ad5b
Gerrit URL: https://gerrit.gromacs.org/3382

#14 - 04/20/2014 08:40 PM - Gerrit Code Review Bot
Gerrit received a related patchset ‘1’ for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: Iffeafa4fac5c5e0c744cf6deecac4eedae2caf5
Gerrit URL: https://gerrit.gromacs.org/3383

#15 - 04/21/2014 02:59 AM - Gerrit Code Review Bot
Gerrit received a related patchset ‘1’ for Issue #1415.
Uploader: Roland Schulz (roland@rschulz.eu)
Change-Id: I9207a7b8de7092bab890da128abb48a8d97b79
Gerrit URL: https://gerrit.gromacs.org/3384

#16 - 04/22/2014 06:17 AM - Gerrit Code Review Bot
Gerrit received a related patchset ‘1’ for Issue #1415.
Uploader: Teemu Murtola (teemu.murtola@gmail.com)
Change-Id: I31312b92cf9f5d5129fbd9f31cf27be27afaf
Gerrit URL: https://gerrit.gromacs.org/3388

#17 - 05/20/2014 09:03 PM - Teemu Murtola
Roland Schulz wrote:

I'm still a bit confused about the dependency checking scripts. What is the easiest approach to use them to know whether moving files into different (sub)folders will create cyclic dependencies?

As a reference, https://gerrit.gromacs.org/#/c/3380/ now allows you to run make doc-check, and it will report any new cyclic dependencies that the changes create. Hopefully, existing cycles will not lead to too many confusing results with the algorithm that is currently used. Until it gets merged, you can just cherry-pick it on top of any change (it shouldn't conflict with much of anything). Just try not to push the cherry-picked version. ;)

11/25/2015
Gerrit received a related patchset '4' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: I9a9dd7f1e62cf0d04d13370d187f16a23ede78fa
Gerrit URL: https://gerrit.gromacs.org/5082

Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: la2b9b6e5342cb3bb582089f4bf82ef2908d969bc6
Gerrit URL: https://gerrit.gromacs.org/5281

Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: l5dc59a2ca3bd1f9c5391f4b9deb9f116b30106fc
Gerrit URL: https://gerrit.gromacs.org/5287

Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: ld6cfdb84cc68318731fac7d800593ada9b828006
Gerrit URL: https://gerrit.gromacs.org/5315

Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: ldb00712d1b0ea9648a36d549f670790aaaaf2c6d4
Gerrit URL: https://gerrit.gromacs.org/5317

Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: l6cd58951e7f1ba0dad75bd4d48a958e57c767e7
Gerrit URL: https://gerrit.gromacs.org/5319

Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: la2d734be40df9742d34a153040cf311a3abf7a3
Gerrit URL: https://gerrit.gromacs.org/5320

Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: I6cd58951eff1ba0dad75bd4d48a958e57c767e7
Gerrit URL: https://gerrit.gromacs.org/5319
Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: I65f07768d46852783dd30cf1a28dd22d614dde125
Gerrit URL: https://gerrit.gromacs.org/5322

Gerrit received a related patchset '1' for Issue #1415.
Uploader: Mark Abraham (mark.i.abraham@gmail.com)
Change-Id: I9885a01474173170bc6a7a7c2e54e721d64370
Gerrit URL: https://gerrit.gromacs.org/5332

#27 - 11/12/2015 08:35 PM - Gerrit Code Review Bot
Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: Ie53f190d6798b81c531896de80ef25066836479
Gerrit URL: https://gerrit.gromacs.org/5335

#28 - 11/14/2015 01:09 PM - Gerrit Code Review Bot
Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: I59c00cc49110a09edcfa7b7520a7a8073b5165c
Gerrit URL: https://gerrit.gromacs.org/5335

#29 - 11/19/2015 12:07 PM - Gerrit Code Review Bot
Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: I811ad4782dd82ac7e198c85c85b91af6e20b67
Gerrit URL: https://gerrit.gromacs.org/5335

#30 - 11/19/2015 01:12 PM - Gerrit Code Review Bot
Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: I33922419a6a5a797bda12d61e2d752e05c5c6d
Gerrit URL: https://gerrit.gromacs.org/5335

#31 - 11/19/2015 04:34 PM - Gerrit Code Review Bot
Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: I33922419a6a5a797bda12d61e2d752e05c5c6d
Gerrit URL: https://gerrit.gromacs.org/5335

#32 - 11/20/2015 05:37 PM - Gerrit Code Review Bot
Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: I959941cf586b90e973598eac026dc923ff7f78aa5
Gerrit URL: https://gerrit.gromacs.org/5363

Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: I485a03eddbb87dccc236b7e2e7d85d03383d8f61
Gerrit URL: https://gerrit.gromacs.org/5365

Gerrit received a related patchset '1' for Issue #1415.
Uploader: David van der Spoel (davidvanderspoel@gmail.com)
Change-Id: If3d99dc24864d21dbbfa2eaf57fd5264f7d3d9ec
Gerrit URL: https://gerrit.gromacs.org/5367