

GROMACS - Task #2519

Feature # 2054 (Accepted): PME on GPU

Task # 2453 (Resolved): PME OpenCL porting effort

Improve/remove PME OpenCL kernel barriers

05/24/2018 05:00 PM - Aleksei lupinov

Status:	New
Priority:	High
Assignee:	
Category:	
Target version:	
Difficulty:	hard
Description	
PME OpenCL kernels currently have additional synchronisation points, as compared to CUDA ones. Some of those barriers should probably depend on minimal execution width (e.g. subgroup size?). It might also be that some are needed at all. The purpose of this issue is to track all of them. Relaxing any barrier requires rerunning Ewald unit tests on all supported and relevant platforms. Hence it is probably beneficial achieve correctness on Intel GPUs first and only then start changing the barriers.	
Related issues:	
Related to GROMACS - Task #2516: Support PME OpenCL execution width < 16	New

Associated revisions

Revision b7afddb8 - 03/05/2019 08:56 PM - Szilárd Páll

Relax OpenCL gather kernel barrier on AMD

Not needed on arch with >32 execution width.

Refs #2519

Change-Id: I4c8f2cff405cd3044bd60b99f01bccd918dc5d0e

Revision a19dd7d5 - 08/15/2019 09:46 PM - Szilárd Páll

Fix OpenCL gather reduction

On ≥ 16 -wide execution it is correct (narrower is checked and excluded during compilation).

TODO: Consider changing the default on NVIDIA & Intel where offloading PME is generally not advantageous to performance.

Addresses part of #2519

Refs #2453 #2516

Change-Id: I24beaaaa096954ba32b3a80251945a9d82a3c05

History

#1 - 05/24/2018 06:05 PM - Aleksei lupinov

- Private changed from Yes to No

#2 - 05/24/2018 06:05 PM - Aleksei lupinov

- Related to Task #2516: Support PME OpenCL execution width < 16 added

#3 - 10/09/2018 03:19 AM - Gerrit Code Review Bot

Gerrit received a related patchset '1' for Issue [#2519](#).

Uploader: Szilárd Páll (pall.szilard@gmail.com)

Change-Id: gromacs~master~I4c8f2cff405cd3044bd60b99f01bccd918dc5d0e

Gerrit URL: <https://gerrit.gromacs.org/8512>

#4 - 02/15/2019 06:34 PM - Gerrit Code Review Bot

Gerrit received a related patchset '1' for Issue [#2519](#).

Uploader: Szilárd Páll (pall.szilard@gmail.com)

Change-Id: gromacs~release-2019~14c8f2cff405cd3044bd60b99f01bccd918dc5d0e

Gerrit URL: <https://gerrit.gromacs.org/9167>